

YEAR-BOOK; COUNCIL
OF SUPERVISORS OF
THE MANUAL ARTS.

1904



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**YEAR-BOOK OF THE COUNCIL OF
SUPERVISORS OF THE MANUAL
ARTS ~: ~: ~: ~: ~: ~: ~: 1904**

**FOURTH ANNUAL MEETING
HARTFORD, 2-3 DECEMBER**



The Year-Book of the Council is not an expression of the judgment of the organization; the opinions of its contributors are individual opinions. It is a consideration of various problems for which solutions have been sought, and as such is offered at the Annual Meeting of the Society for critical discussion.

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Copyright, 1904
By JAMES P. HANEY

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Note.

THE COUNCIL of Supervisors was organized in May, 1901. It has for its chief function the critical discussion of questions immediately concerned with the advancement of the Manual Arts of Drawing, Design and Constructive Work in the public schools. Its active membership is limited to forty. Each active member is expected to contribute, by article or discussion, to the program of the Annual meeting.

Articles are discussed but not read at the meetings. When necessary they are illustrated by exhibitions of work. All papers for discussion are published in advance in the Year Book of the Council.

Admission to the Council is to be secured by election to associate membership. The number of associate members is limited to one hundred. From this number the active members are elected.

The name of each applicant for associate membership must be proposed and seconded by two active members of the Council to whom the applicant is known. To insure consideration by the Executive Committee at the Annual Meeting, in December of each year, all applications should be forwarded to the Secretary of the Council by November first.

Officers, 1904.

President,
JAMES PARTON HANEY.

Vice-President,
WALTER SARGENT.

Secreatry,
EDWARD D. GRISWOLD.

Treasurer,
WILLIAM J. EDWARDS.

Executive Committee,

PRESIDENT, *ex-officio*.
SECRETARY. “

VICE-PRESIDENT, *ex-officio*.
TREASURER, “

JAMES HALL,
ELIZABETH H. PERRY,
JULIA C. CREMINS.

Committee on Publication,

SOLON P. DAVIS,

HENRY T. BAILEY.

Auditing Committee,

VICTOR I. SHINN,

WALTER M. MOHR.



Constitution.

ARTICLE I.

NAME.

THE name of this organization shall be "The Council of Supervisors of the Manual Arts."

ARTICLE II.

PURPOSE.

The purpose of the Council shall be the advancement of the Arts of Drawing, Design and Constructive Work in public education and the cultivation of a strong professional spirit among those charged with the supervision of these branches in the public schools.

ARTICLE III.

MEMBERSHIP.

Section 1. The Council shall be composed of Active and Associate members.

Section 2. Associate members shall consist of those actively engaged in the supervision of the Manual Arts in cities, towns, colleges, normal and high schools, who are elected to such membership on nomination by the Executive Committee.

The number of associate members shall be limited to one hundred.

They shall be entitled to be present at the Annual Meeting and to receive the Year Book of the Council; but shall not be entitled to the privileges of the floor.

Section 3. Active members shall consist of those associate members who are elected to active membership on nomination by the Executive Committee.

The number of active members shall be limited to forty. They alone shall be entitled to vote and hold office.

Section 4. Candidates for active or associate membership shall be elected by ballot at the regular meetings of the Council. Negative votes amounting to one-fourth of those cast shall reject a candidate, but any candidate rejected may again be proposed after a lapse of one year.

Section 5. The name of a candidate shall be voted upon only after an application in writing, endorsed by two members of the Council, has been reported upon favorably by the Executive Committee. The proceedings of the Executive Committee, acting as a Committee on Membership, shall be secret, and its members shall not be questioned in regard thereto.

ARTICLE IV.

OFFICERS.

Section 1. The officers of the Council shall be a President, a Vice President, a Treasurer and a Secretary. These officers, together with three (3) other members, shall constitute the Executive Committee, all to be elected at the Annual Meeting by a majority vote of the active members present.

Section 2. The officers shall be elected to serve one year, and shall hold office until their successors are elected.

Section 3. All officers and members of the Executive Committee shall be nominated by a Committee on Nominations, consisting of three members. The members of this committee shall be elected at large by the Club on the first day of each Annual Meeting, and shall report before the close of such meeting.

ARTICLE V.

DUTIES OF OFFICERS.

Section 1. The duties of the President, Vice-President, Secretary and Treasurer shall be those commonly prescribed. The Treasurer shall disburse the funds of the Council, in payment of its obligations, upon order of the Executive Committee or a Committee on Audit appointed by the President from among its members.

Section 2. The Executive Committee shall carry out the purposes of the Council, arrange places and programs of meetings, and shall transact such other business as may arise between regular meetings. Five members shall constitute a quorum of the Executive Committee. The President of the Council shall be *ex-officio*, the Chairman of the Executive Committee and of its sub-committees. The President shall appoint two members of the Executive Committee to act as Committee on Publication of the Year-Book of the Council,

ARTICLE VI.

QUORUM.

A quorum for the transaction of the business of the Council shall consist of fifteen active members.

ARTICLE VII.

BY-LAWS AND AMENDMENTS.

Section 1. By-laws consistent with the Constitution may be adopted by a two-thirds vote of the active members present at any regular meeting.

Section 2. The Constitution may be amended at any regular meeting by a two-thirds vote of the active members present, provided that printed or written notice of the proposed change has been mailed to each member of the club at least five days before the meeting at which it is to be acted upon.





By-Laws.

ARTICLE I.

MEETINGS.

SECTION 1. The Annual meeting of the Council shall be held on the first Friday in December and on the Saturday thereafter.

Section 2. The program shall be prepared and announced by the Executive Committee on or before the first day of April preceding the Annual Meeting.

Each active member shall be invited to participate at each meeting, either in the preparation or discussion of papers of the program.

Section 3. All papers prepared for discussion shall be placed in the hands of the Committee on Publication on or before September 1st.

Section 4. On or before November 1st the Committee on Publication shall edit, print and forward to each member the papers to be discussed at the Annual Meeting. No paper shall exceed 4000 words in length.

Section 5. At the Annual Meetings the time allowed each speaker assigned on the program to discussion shall be *seven minutes*. Not more than three members shall be so assigned.

The time allowed each speaker in free discussion shall be *two minutes*.

The time allowed the writer of the paper in closing discussion shall be *five minutes*.

ARTICLE II.

FEES AND DUES.

Section 1. Each associate member shall pay five dollars initiation fee and two dollars annual dues, such payment to be made within thirty days

after notice in writing of election. In default of such payment, the name of such member-elect shall be dropped from the roll of associate members.

Section 2. Each active member shall pay five dollars as an initiation fee as active member and five dollars annual dues, such payment to be made within thirty days after notice in writing of election. In default of such payment the name of such active member-elect shall be dropped from the roll of active members.

Section 3. Annual dues shall become payable one month before the Annual Meeting. If not paid within thirty days after such meeting the name of the member in arrears shall be dropped from the roll of membership.

ARTICLE III.

PUBLICATIONS.

Section 1. The dues paid annually by each active member shall entitle such member to two (2) copies of the Year-Book for the ensuing year.

Section 2. The dues paid annually by each associate member shall entitle such member to one (1) copy of the Year-Book for the ensuing year.

Section 3. Active and associate members elected subsequent to the organization of the Council shall be entitled to purchase, at two dollars per volume, one copy of each previous issue of the Year-Book which they have not, as members, already received.

Section 4. Except as noted in the previous sections of this article, the price of the Year-Book, to members and all others, shall be three (3) dollars.

ARTICLE IV.

The following shall be the order of business at Annual Meetings of the Council:

1. Call to order by the Chair.
2. Reports of officers and committees.
3. Election of associate members.
4. Election of nominating committee.
5. Discussion of published transactions.
6. Open discussion — Good of the Council.
7. Election of active members.
8. Election of officers.
9. Adjournment.

ARTICLE V.

These By-laws may be suspended or changed at any regular meeting by a two-thirds vote of the active members present.

Program.

Fourth Annual Meeting, Hartford, December 2 and 3, 1904.

Friday, December 2nd.

MORNING SESSION.

REPORTS OF OFFICERS AND COMMITTEES.

ELECTION OF ASSOCIATE MEMBERS.

ELECTION OF NOMINATING COMMITTEE.

DISCUSSION.—Led by Miss ANNETTE J. WARNER on Miss PERRY's paper—"The Art Department of the Normal School."

DISCUSSION.—Led by Mr. THEODORE M. DILLOWAY on Mr. DAVIS' paper—"The Manual Arts in Extension Schools."

DISCUSSION.—Led by Mr. WILLIS B. ANTHONY on Mr. DANIELS' paper—"The Stereopticon in the Art Course."

AFTERNOON SESSION.

DISCUSSION.—Led by Mr. FREDERIC L. BURNHAM on Mr. BROWN's paper—"Furniture for the High School Drawing Room."

DISCUSSION.—Led by Miss MABEL E. STOCK on Mr. HALL's paper—"Art and School Festivals."

DISCUSSION.—Led by Mr. FREDERICK WHITNEY on Mr. BAILEY's paper—"The Professional Schools of Paris."

EVENING SESSION.

ROUND-TABLE.—Subject—"Phases of Applied Design."—
Discussion led by Mr. ARTHUR W. DOW.

Saturday, December 3rd.

MORNING SESSION.

DISCUSSION—Led by Mr. VICTOR I. SHINN on Dr. HANEY's paper—"The Course of Study in the Arts."

DISCUSSION—Led by Miss LILLIAN M. DEARBORN on Mr. SARGENT's paper—"Primary Drawing."

DISCUSSION—Led by Miss IDA TEED on Miss CREMINS' paper—"Constructive Work in Primary Grades."

AFTERNOON SESSION.

DISCUSSION—Led by Mr. HENRY T. BAILEY on Mr. BATCHELDER's paper—"Constructive Design."

DISCUSSION—Led by Mr. WILLIAM J. EDWARDS on Mr. GRISWOLD's paper—"Woodwork in the Elementary Grades."

DISCUSSION—Led by Mr. CARLETON C. MCCALL on Mr. MOHR's paper—"Working Drawing in Elementary Schools."

DISCUSSION—"Good of the Council."

ELECTION OF ACTIVE MEMBERS.

ELECTION OF OFFICERS.

ADJOURNMENT.



The Course of Study in the Arts

Some Principles and their Implications

JAMES PARTON HANEY

INTRODUCTORY NOTE

THE curriculum of the elementary school has seen significant changes in its organization in the life of a single generation.

Within this time, the course of study, once the stronghold of the R's, has had its citadel breached and the banners of invading specialties planted on its walls. Yet few of the new subjects have joined in perfect congruence with the old, while the invasion itself has been productive of lengthy controversy. In the discussion much has been written, a deal of it polemic, but little directly touching those problems which confront the superintendent or supervisor who must plan for large and complicated school systems.

The present article presents some of these. It follows a general discussion of the place of the arts in the curriculum* and takes up certain questions which could not be considered in a review elsewhere made of the principles of supervision.** The theory presented, keeps constantly before it the factors which condition its practical development. Certain details concerning the latter are treated in succeeding articles on Elementary Constructive Work, Mechanical Drawing and Shop Work. These articles have been prepared in conjunction with this general statement.†



*Year Book, 1902-1903.

**Year Book, 1904.

†The Subject of Illustrative Drawing will be found developed along the same lines in the Year Book for 1903.

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IT would seem unnecessary to urge upon special teachers the importance of familiarizing themselves with the principles which underlie the general course of study. Some of the sharpest criticism leveled at the arts, has condemned their lack of interrelation and development along lines which would serve to bring their different parts into harmony with one another and with the general curriculum. It is scarcely to be questioned that such shortcomings have been due to failure on the part of special teachers to see their specialties as actual parts of that curriculum, dependent upon the same principles and governed by the laws which condition other subjects of the course of study. It seems to have been assumed by these teachers that one has only to arrange and teach a progressive series of exercises in drawing, construction and design in order to achieve success. This view has aided to isolate the special subjects and to prevent their incorporation in the body of elementary studies.

To correct the difficulty teachers of these subjects must learn to know the curriculum as a whole and see the arts only as a part of that whole. They must come to see that a responsibility rests upon them, not alone for their specialty, but for the development of the course of which such specialty forms a part. The application of general principles to the teaching of the Arts once plain, some definite plan may be evolved for their organization.

A consideration of this nature forms the basis of the following discussion, a statement, to wit: of the principles which govern the course of study, and of their implications as regards the teaching of the Arts, together with some specific suggestions offered in the light of the conclusions drawn.

SOME PRINCIPLES OF EDUCATION

A survey of any well organized course of study reveals four agents operating to shape it: the individual to be educated, the aim of his education, the means at hand and the methods to be employed.

THE INDIVIDUAL

The consideration of the individual as such, is one most important for teachers. Man's study of himself has proceeded from the very

beginning of civilization, but it has not been until very recent times that science has put into the hands of the teacher data of consequence concerning the child. The studies of Fiske some years since called attention to the important influence upon the race, of the lengthening period of childhood. More recently the study of the child has given us a great mass of facts which is now in the way of being formulated as a body of scientific doctrine.

The evidence which evolution presents, has profoundly affected our view of individual growth. "Since the publication of Darwin's *Origin of Species* indicating how all forms of life have been developed, how they have come into possession of various organic and mental powers, men have grown to feel that we have at last a great law which points out whence men's faculties have come, what is their *raison d'être*, how they are designed to be employed and what conditions are essential for the attainment of the highest success in individual and social life."*

The nature of the growth of the child and the unfolding of his mind must be undertaken in the light of the development of the race of which he is a part. Genetic psychology presents so much of the laws of his mental development as we know. This psychology considers the organic nature of mind and places before the student the underlying principle that formulates itself in the statement that *education is an organic process*.

From a study of growth the teacher learns to distinguish distinct phases. The child from six to nine, differs markedly from the child of nine to twelve. The latter, in the pre-adolescent stage is again very different from his brother older by a year or more.† While the brain of the pupil of twelve is fully grown and of adult size and weight, his hand is still its readiest organ of expression. His interests are many, his constructive desire is keen and his ingenuity is marked. Reason, sympathy, æsthetic comprehension are as yet but slightly developed. Different forms of skill are readily acquired. The child is still busy with the process of growth. He is engaged in forming

*O'Shea, M. V. *Education as Adjustment*. N. Y., 1904.

†For discussion of the earlier periods see Hall, G. S., "Ideal School Based on Child Study," *Proceedings N. E. A.*, 1901. For an elaborate discussion of youth see Dr. Hall's *Adolescence and its Psychology*. N. Y., 1904.

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habits rather than in using those already formed. As seen in the class room he is an organism undergoing daily change, responding instantly to external impressions. He is in no wise static, and formal training cannot successfully be used to develop him. As training it must be adapted to his needs, concerning itself immediately with his growth. It must remember that his immaturity as immaturity is not something to be frowned upon, but that as all stages of development are relative, it is the business of the teacher to recognize the characteristics of the phase which is present and so to condition the child's environment, that he may with ease pass to the next higher plane.

It must be understood however that every characteristic which the child presents is not one calling for development. Not all are to survive. Some are but traces of a stage already passed. "To give positive attention to such is to arrest development upon a lower level. . . . Other activities are signs of a culminating power and interest. To them applies the maxim of striking while the iron is hot. As regards them it is perhaps a matter of now or never. Selected, utilized, emphasized they may make a turning point for good in the child's whole career; neglected, an opportunity goes never to be recalled."* Material then, to be assimilated, must be appropriate to the stage in which it is presented. *Education is a developmental process.*

To secure the advantage which comes from this view the individual must have given to him opportunity for self expression. Each individual is different. Mass instruction will not do. Real growth demands that the individual make personal response, that he react to personal stimulus. We seek this reaction when we seek original expression. *Education looks to the cultivation of individuality.*

The moment children act they individualize themselves. The question of their education is largely one of taking hold of their activities and directing them. Of the instincts which they show the social dominates. All things are referred to the life which the child knows. In his earlier stages he is most directly approached through interests based upon instincts, through his desire to examine, to tell about things, to make and decorate them. His deep lying instincts must then be

*Dewey, J. Child and Curriculum.

made the start points for his development. *The child himself must be the center of the curriculum.*

AIM OF EDUCATION.

The aim of education is stated in a variety of ways by different writers. Some seek to put it into a word or phrase by saying that Education "is to train the mind," "To develop character," "To secure man a harmonious development" or "To prepare the individual for complete living." All of these definitions are general and of small service when we seek to derive from them principles which shall guide us in reaching the goal they present. That education is a preparation for complete living is doubtless true, but unfortunately scarce two writers can be found to agree as to what the preparation shall be, or what the term "complete living" shall be understood to include.

More satisfactory than these sententious statements is that of Hanus that "The end of education is the acquisition of knowledge drawn from the fields of human activity—man and his experience and achievements, and external nature, and training to intelligent and progressive activities in the use of this knowledge."* This puts in other words the statement that *education aims to adapt the individual to his environment.*

For generations education dealt with processes of learning. Insistence is now placed upon the fact that it should deal with processes of doing—with life itself. "Subjects in the curriculum," says Dewey, "should be taught in such a way as to throw light on the problem of life rather than on separate departments of knowledge," and again, "our most profound tendencies both instinctive and acquired have for their aim the constant use of means to attain some sort of ends that have practical worth for us." † Similarly Butler demands that the entire educational period after those physical adjustments have been made which enable the child to use his hands, to walk and be independent, be devoted to the *adjustment of our "spiritual environment"*—to a revelation to the child of his *scientific and literary inheritance and his inheritance institutional, æsthetic and religious.* Such

*Hanus. Educational Aims and Educational Values.

†Dewey, J. The Psychology of Number.

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revelation seeks to make plain to the child his social status, seeks "to develop social action and can take no account of possible thought or feeling which exercises no influence upon one's behavior toward one's associates in the business of life."*

Evolution has shown how man has developed and related himself to his surroundings. It has shown how his mind has grown in power, not through sensations alone, but through reaction, expression and movement. Thus it has helped re-write the principles of psychology and in so doing has made it plain that the mind of the individual does not function apart but in relation to other minds,—“receives its support continually from other minds.” *Education it presents not only as a developmental, but as a socializing process.*

Social impressions may be likened to physical impressions, and the teacher will seek to have the child properly respond or react in social situations during the years of his training, that such reaction may become habitual. To promote the social revelation, education offers all means of intercourse that may be of service. It strives to give different points of view—the literary and æsthetic, that the pupil may appreciate these elements of his inheritance, the scientific and constructive that he may master his physical environment. It would make plain to him his varied powers and his ability to adapt his environment to his needs; *it would in the broadest sense seek his self-revelation.*

MEANS.

By educational means we signify the subject matter which we may use to respond to the needs which have been defined in the foregoing discussion. For this purpose there offers a wealth of knowledge and variety of processes which man has developed in his social life, in his contact with nature, in his work as student, as artist and as artisan. Such material divides itself naturally into great classes—scientific, literary, social, industrial and moral. A consideration as to what of this shall be chosen, raises at once the question of the educational value of the elements which offer.

In the determination of these values theorists disagree. “One party values studies for their mental discipline, another for their æsthetic

*Butler, N. M. The Meaning of Education.

culture, a third for their bearing upon the physical welfare of the individual, a fourth for their fitness to occupy certain categories of thought." Herbert Spencer in his well known monograph emphasizes the value of studies that preserve health and those that produce wealth, yet neither economic nor physiologic standards will alone suffice. A broader principle of estimating values must be employed. In the language of De Garmo* "We need to make first of all a careful estimate of the value of each study from its capacity to make a progressive revelation to the child of the ideas and real conditions of the civilization in which he must live." No studies may be admitted to the curriculum which are not later to be used, no studies merely for the disciplining of the mind by formal exercises.† We must exclude every thing that is not seen to have actual power to assist the learner to assume greater command over himself, or to prosper his relation with men and things. *The element of reality must constantly appear.*

Of each subject admitted to the curriculum must be asked: what can this contribute to the knowledge of the child, what has it to offer as a practical tool, and what as a means of making the "social content" a reality? The educational value of a study should be measured "by what it does for the individual's entire life." Its power as an incentive to self expression and effort is a gauge. "If," says Hanus, "We find certain subjects yielding higher incentives than others, we must accord to such subjects a higher educational value than to others." *Each subject to be admitted to the curriculum must make plain its worth as a developmental agent and a socializing force.*

Subjects are selected in common for the same end. Once in the

*De Garmo, C.; Scientific vs. Poetic Study of Education. Educational Review, May, 1899.

†The following are the conclusions of McMurry; F. M. (Educational Foundations, May, 1904) as to the forms of subject matter to be rejected from any course of study. Their implications in the case of the Arts are obvious.

1. What ever cannot be shown to have a plain relation to some real need of life, whether it be aesthetic, ethical or utilitarian in the narrow sense, must be dropped.

2. Whatever is not reasonably within the child's comprehension likewise.

3. Whatever is unlikely to appeal to his interest, unless it is positively demanded for the first very weighty reason.

4. Whatever topics and details are so isolated or irrelevant that they fail to be a part of any series or chain of ideas, and therefore fail to be necessary for the appreciation of any large point. This standard, however, not to apply to the 3 R's and spelling.

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curriculum and forming a definite part of it, the relations which should maintain between them must never be forgotten. Abstract principles of classification and arrangement of material should not be erected as against those practical relations rising from the child's life. There is very often in the selection of subject matter, a failure to recognize the limited and personal nature of the child's world, to recognize what has been called the unity of the child's life as against the specialties of the curriculum. Elements of subjects are commonly dissected away from parent stems that their parts may go to form other subjects in a course of study. Says Dewey, "The adult mind is so familiar with the notion of logically ordered facts that it does not recognize—it cannot realize—the amount of separating and reformulating which the facts of direct experience have to undergo before they can appear as a study—'a branch' of learning." Each subject should make directly for the common aim. *There should be unity in the subject matter throughout the course of study.*

METHOD.

Methods of teaching must constantly keep in view both the individual to be taught and the aim of his education. The purpose of teaching is to give the child occasion and object for all the information sought, that there may be on his part, "a maximum of consciousness" in every effort. The great principle of method is to lead the pupil to make and profit by those adjustments, which the subject he studies specifically requires. Method looks to the self-active interests of the child to effect its purpose. Formal and sequential steps arranged logically to develop the subject without regard to the child's interests, are unsatisfactory. All facts should closely relate to the pupil's previous experience in and out of school. The point of departure should be from what the pupil has already seen or done. *Interest must continually be the appeal in order that definite achievement may be the result.*

Not only must the details of all subject matter presented be related to that knowledge which the child already possesses but those relations through which the subject touches other interests and other subjects must also be made plain. In technical phrase the subject learned must be correlated by the teacher and apperceived by the child. Subjects

with common interests will naturally sustain the closer relations. That the curriculum may gain through such unification and through such development from common centers various plans of grouping have been developed.*

The effort to cultivate skill must be guarded against else technique will come to be looked upon as an end, and the effort defeat its purpose by leading to an arrest of development. To secure the best results, formal practice should be followed by a requirement that the skill gained be exhibited in free expression.

It must be remembered that "Conscious power comes earlier when the results of labor are tangible." In the earlier years immediate results are necessary, but at the close of the pre-adolescent period the child is prepared to accept practice as necessary to technical excel-

* CORRELATION: Two main forms of correlation are to be distinguished, the first based on natural relations as those borne by history and geography, and the second, the subordination of all studies to one or more main ideas which become the centers or cores about which the other subjects are grouped. It is to be noted that with all plans, there is a constant tendency toward this "centralization".

A variety of opinions exist among those who advocate a grouping of the studies around centers. Some would have several, some only one. To the plan having several centers the term Co-ordination has been given, leaving the term Concentration for application to the theory which advocates but one. The former plan is advocated by De Garmo¹ who would have three co-ordinate

¹ Essentials of Method, N. Y., 1902.

centers or cores; by Prince† who would have four, and by Harris who in the Report of the Committee

† Prince, J. T. Course of studies for Elementary Schools. Boston, 1899.

of Fifteen recommends five. The plan of concentration which represents the Herbartian idea was in this country advocated, in a way, by Colonel Parker and will be found worked out in detail in the writings of Charles and Frank McMurtry.

In a growing number of cases the effort is now to make the personality of the child the center. Says Jackman * "My conception of the organizing center or thought in correlation is not the

* Jackman, W. S. Educational Review, January, 1896.

fortuitous suggestions of the subject, but is the present needs of the developing child. The life of the child therefore becomes the controlling center."

A similar idea is emphasized in the conclusion reached by Young† from a discussion of the

† Young, E. F. Modern Educational Theories. The theories discussed are those of Tomp-

kins, Alling, Speer, Parker and Dewey.

theories of a number of educators. Each theory, notes this writer, has been found to move about the idea of self initiated activity. Each projects man as primarily a social being. The individual applications of the idea of school organization as the visible expression of community life result in some of the variations which give rise to the different types.

Of the views of Zeller and Rein representing one great branch of modern German pedagogy, Lukens writes "With them the growing personality of the pupil is the center to which all the multiplicity of interests and new ideas must be related, and their idea of concentration is that of unification of the manifold subjects of instruction in the growing personality of the child. This is also Parker's idea and is, I think, undoubtedly correct. The growing mind of the child is the center in a sense in which no one subject such as history, literature or science can ever be."‡

‡ Lukens, H. T. Correlation of Studies. Educational Review, November, 1895.

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lence. Technique always remains a subject which demands "a background of actual experience." "There is a technique for each act, knowledge of which adds greatly to the power to work effectively. This must be taught specifically and thoroughly, but at the proper time and in the proper way, that is when the child feels the need of it."*

SUMMARY OF PRINCIPLES.

Summarizing the principles which have been deduced, we may say that education is to be looked upon as an organic process, one which must be made developmental. It seeks to cultivate the individuality of the child and sees in his interests and instincts those start points from which his training must take its departure. The aim of education is to adapt the child to his environment, to make him the possessor of that knowledge which is the inheritance of the race, to reveal to his own powers and make plain his relations to his kind.

The educational value of a subject is the factor which admits it to the curriculum. Each subject so admitted must be both developmental and socializing—and must have the element of reality. Unity among the subjects of a course is essential; it is dependent upon the directness and force with which each subject makes for the general aim.

Methods of teaching are designed to give the child occasion and motive for all information sought, they aim to lead him to make personal adjustments, they seek their rise in his interests and their end in his definite achievement. They would see all facts properly related and the curriculum as a whole co-ordinated by the development of subjects from common centers. Technical skill they would develop only in response to a realized need.

GENERAL PRINCIPLES IN TERMS OF THE ARTS.

The principles which comprise the foregoing summary are general. They apply with equal force to all subjects of the curriculum. Their implications in the case of the arts it is now the purpose to consider.

*Gilbert, C. Educational Review, 1896.

THE INDIVIDUAL. An element in an organic process, the Arts' course must have its branches planned to meet the constant change in the child's interests and capacities. As a course it must be fitted to the child, not the child to it. The subjects in such a course must act jointly.

To make a course in the arts developmental, means that the material must be adapted to the various stages through which the child passes, and so arranged that it shall satisfy the needs peculiar to each period. The play instinct and the desire for free expression in construction must first be met. The big muscles must be co-ordinated. In the early years fine movements and adjustments are to be deprecated. Formal drills must then be brief. Practice should be succeeded by free expression. The motor must not be developed at the expense of the emotional. Later, the pupil's desire to decorate, his willingness to drill that he may perfect technique, his growing interest in constructive processes must be recognized and fostered. Watch must be kept over each period that at its close he may be ushered into the next, in every sense of the word, well developed.

AIM OF ARTS. The exercises in the various branches should take their rise in matters of immediate concern and interest. In the case of the smaller children, these will relate to the life in school, to the activities of the home, to the doings of their animal friends. Thence the steps should lead in a constantly widening circle to a knowledge of the world without. So far as possible the things studied are to be drawn and constructed that they may be understood, identified and made a part of a growing apperceptive background. The development of the work out of social needs and the reference of it back to social necessities is a part of the service of the Arts not to be over emphasized.

The aim of all technical teaching should be to put the child in a position to use his knowledge for practical and personal ends. He should come to look upon original expression as the goal of all preparation. Technical excellence should be secured through the desire for individual success in performance.

The knowledge of beauty which is taught should be practical

knowledge. It should lead not only to an apperception of fine things but to a knowledge of the elements which make for refinement and to a real desire for constructive and decorative expression in the terms of taste. *Æsthetic* appreciation it must be remembered, grows slowly. In the pre-adolescent stage, principles of artistic composition are best developed in practice. The arts should aim however, to convince every child that he has within him at least a spark of the Promethean fire. Self revelation can only come through effort and travail. Every teacher of the arts has it in his power to disclose to the child, faculties and abilities which lie dormant and in the seed stage until caused to blossom by opportunity and incentive.

VALUE OF ARTS. The educational value of the arts, it would seem scarcely necessary to review. The force of their claim for recognition lies in the fact that on one side they stand as the natural channels through which the normal child must grow, while on the other they appear as agents opening a score of roads whereby the child can pass to the world outside the school and gain in his journey knowledge, taste and manipulative skill, and a broad and sympathetic insight.

It must rest with the teacher to see that as agents so responding to educational needs the arts are developed in practice. The plans the child makes should be real plans and the forms constructed, forms for use. Every phase of practice should be permeated by the essence of reality—not a crude utilitarianism but a sense of actual import and service that translates the mockery of “school exercises” into things warm with the pulse of the world’s work.

METHODS OF TEACHING. When the things made are things for use, occasions and motives offer for all information sought. The problems so presented bring the child face to face with the necessity for personal adjustment. Methods in the arts are not to be dictated but discovered. A premium is to be put upon invention. Initiative and ingenuity are to be called on in every hour. The difficulties of sense perception and manipulation are to be made the natural basis for lesson development.

Correlation of the arts’ course is essential. The drawing, construction and design must be developed together and in connection

with the other subjects of the curriculum. To find varied ways of relating these subjects to Language, Nature study, Number work and other school interests is the business of the arts' teacher. Around a single model may often be gathered a score of lessons in sketching, making and decoration. So developed such form is one to be dreamed about and planned about by the child. In no other way can personal interest be so directly enlisted and technical skill so certainly insured. Things so made have an impressive worth. In them the command that achievement be made definite, is signally realized. If art represents pleasure in labor, such forms in their making distill the quintessence of art itself.

The demand for co-ordination in the curriculum is a demand for unity. Through one means or other the arts must be identified as essentials. Some schemes look to them as central subjects, some admit them only as related topics. But whether developed from within or related from without it must be the business of the teacher to see that they take their primary rise in the definite interests of the child. The absorption and identification of the arts' course in the curriculum is to be effected only by making such course reflect the child from its every side. As a course it may develop at the very heart of the curriculum or, it may appear in each of the cycles of a culture epoch plan. It may grow from centers or may relate itself to foci of interests which arise in connection with other subjects. Whatever plan is followed, the end is gained when the arts themselves cease to exist as "specialties" and take their place as essentials—unique and indispensable.

ERRORS IN COURSES AS ORGANIZED.

Errors arise from failure to heed the principles which have been cited. Some teachers aim to make their specialties develop technical skill and some seek culture; but so long as they ignore general principles their courses must remain in a stage of arrested development.

The chief short-comings may be summed under the following heads:

1. Failure to present the subjects as developmental and socializing agents;

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2. Failure to relate the subjects and to secure uniformity in aim;
3. Failure to properly present technical and æsthetic requirements;
4. Failure to secure co-ordination.

These forms of failure may at times be found existing separately; in far too many cases they stand quadruplicate evils.

The course which is not developmental ignores in the early years the function of the arts as agents of expression. It looks to a planned and formal sequence of exercises and counts upon the changing nature of the child to accumulate information in adult fashion. Such course deprecates the original and individual, and substitutes a lock-step advance for the guided freedom of the child's eager pencil.

The course which is not one-purposed in its aim, fails to secure for the different subjects their mutual support. Drawing in such a course is developed as drawing, and design as design, while picture study, color, construction, mechanical drawing and the like, stand unrelated and apart. Simplicity comes from unity of aim. Such a course has the complexity of aimlessness. It seeks the development of separate branches and remains a group of special subjects in the curriculum.

TECHNIQUE. There is no more delicate question in organization, than that of technique. Most printed courses of study bristle with directions. Dozens are offered to insure successful performance. The aim of the exercise is quite overshadowed by the means.

Adequate knowledge of the way to do things is essential to their execution, but over emphasis upon technique defeats its end. The dictated exercise does not respond to a realized need on the part of the child. The expression secured is not a personal expression. Unless it be made plain that the power gained is to be used in personal fashion, the child himself profits little by obedience to directions. Such a course sacrifices breadth of purpose to perfection of product.

ARTISTRY. Associated with the undue development of technique one usually finds misplaced emphasis upon æsthetic relations. The attempt is made to force the little child to make beautiful things. Real appreciation of æsthetic beauty is beyond him, but directed by

a technician who feels it her mission to inculcate beauty at every age, he may, by mechanical process, be led to produce results most seemly in appearance. The elaborate and artistic beauty of these is conditioned only by the disciplinary skill of the teacher and her own æsthetic limitations. To paraphrase a famous line—such work is splendid but it is not child-art. It is deceptively fine and handsomely meretricious—doubly bad in that it has failed to develop true power, and has taken the place of better things.

CO-ORDINATION. The co-ordination of the arts in the general curriculum is dependent to a certain extent upon the form in which such curriculum is developed. In few schools as yet are the arts made the primary centers of development, and in not many more is a culture epoch plan followed with its definite centers in each grade. For the most part the organizer must relate his subjects to centers which are based upon the interests and needs of the child in school, and to those other subjects of the general curriculum (Language, Nature Study, etc.), which cannot be properly taught without objective illustration. Co-ordination in this manner is possible in any course of study; neglected, a most powerful aid is ignored. The advance of the arts is to be looked for in their wider acceptance as a mode of teaching. Such acceptance can come only through the experience of those who have had them offered as certain means of winning their pupils to happy, interested labor in many fields, who have used them thus and found them good. Un-coordinated, an arts' course however elaborate is but half organized.

In this we may see how far short of the needs of any school system, a "book course" with "logical sequence" of exercises must fall. To be truly valuable, it is essential that an arts' course reflect the general system of which it is a part,—not that it have the negative virtue of fitting any curriculum, but an immediate and vital relation to one. For that curriculum and no other it should have been specifically planned. The supervisor who would start aright must dig down to this principle and build from it. He then will build on rock.

It is to be remembered that the plan devised must serve to train

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teachers as well as children. That which does not aim to arouse the individual expression of the child cannot but fail to secure the interest of the teacher. Upon the nature of the plan decided upon, must depend the latter's attitude and her comprehension of the aim of the course. Determined effort must be made to secure her active co-operation and to make her see the power of the course as a whole. She must not only realize her pupils' relations to the work, but her own relations to it. She must understand it not as a form of technical teaching, but ever as "a method of introducing a vital and personal experiencing." As to each subject, says Dewey, "What concerns her, as a teacher, is the way in which that subject may become a part of experience; what there is in the child's present that is usable with reference to it; how such elements are to be used; how her own knowledge of subject-matter may assist in interpreting the child's needs and doings, and determine the medium in which the child should be placed in order that his growth may be properly directed. She is concerned, not with the subject-matter as such, but with the subject-matter as a related factor in a total and growing experience. Thus to see it, is to psychologize it.*

HINTS ON ORGANIZATION.

Following are a number of suggestions relative to organization. Detailed consideration of these would unduly expand this paper. They are therefore left in condensed form to be read in the light of the foregoing discussion.

TIME: The time to be devoted to the arts is one of the first questions which must be considered by the supervisor about to organize a course of study. The effort should be to secure in the lowest grades one short lesson a day in some form of expression work; in the intermediate grades three lessons a week and in the higher grades two lessons a week in drawing and construction. Periods of twenty-five minutes will suffice in the first two years, forty in the intermediate and fifty in the highest grades. It is a mistake to attempt to develop lessons in periods shorter than these as, in such shorter periods, time in

*Dewey—Child and Curriculum.

excess is taken to collect the material used. This is inevitably productive of criticism.

EXPENSE: The amount of money which may be spent for "plant" or permanent supplies, and the additional sum for running expenses forms an element which conditions the general plan of organization. A liberal school committee means the possibility of drawing in pencil, crayon, etc., doing brush work in ink and water color, and construction in oak tag and raphia, cane, worsted, cardboard, iron tape or thin wood. An economical committee means that most of these materials will have to be omitted and the work confined to pencil and paper with such additional material for construction as the children themselves are prepared to furnish.

It is, however, to be understood that the spirit of the course may be maintained despite liberal or meagre supplies, ample or scanty time. This spirit looks to see the work used in connection with other school studies. Properly understood this insures satisfactory development though the results as such may not be as elaborate or attractive as those secured under favorable conditions. A school with much to seek in the matter of supplies may see its work realize ideals of use and value unapproached by the formal exercises of an opulent neighbor.

SUBJECTS: It has been assumed that every course in the arts will include work in Drawing and Construction. Just what phases of each will appear the supervisor must decide. Experience has led the writer to put increasing value upon the free drawing or Illustrative work of the earlier years. It is recommended that this play an important part in the introduction of the child to the pencil. No other form of the arts so readily lends itself to the securing of individual expression and to the development of other phases of the curriculum.

Plant form or Nature drawing will be introduced because of the keen interest which always attaches to the model, because, too, of the ease with which suitable models may be secured in rural schools and the great variety of forms which offer for individual study. In city schools other forms than these must often be offered. In the elementary

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grades familiar two-dimensioned objects of the class-room will answer, particularly as interesting language lessons may be woven round them. These may be varied by lessons on vegetables or on those animal forms now procurable in papier-maché. As the child advances and it becomes necessary for him to consider the question of foreshortening, the water cups and flower pots of the class-room, and later the boxes, jars, cans and bowls contributed to the school-room stock of models, will afford material sufficient.

In determining the elements to be used in construction the supervisor must be guided in large measure by local conditions. Space will not permit a discussion of the comparative merits of the various materials which may be employed for this purpose. It is recommended however that in the lower grades the work be not confined to paper, or raphia, but that the teachers be given opportunity to develop forms of that material which will best in its construction meet the needs of the class. Caution is given against the over emphasis of mechanical techniques like those employed in weaving, braiding and the like, which seek automatic action and perfection of execution rather than ingenuity of application.*

COLOR, DESIGN AND MECHANICAL DRAWING.† These subjects will appear in the course in the arts as elements, subordinate but intimately related to the work in Drawing and Construction. So related the reason for their introduction is plain and there is avoided a most serious evil, that of overcrowding the course with a variety of separate subjects and special techniques, the purpose of which is not apparent.

In developing the subject of Color the attitude of the child must be borne in mind. His primary desire is for intense colors and marked contrasts. He should be led from these gradually. Dictated lessons may suffice to make him produce low-toned harmonies, but the product is an unnatural one. This may be evidenced by allowing the child freedom for self-expression after his æsthetic performance. He will invariably return to bright combinations, showing that the low-toned

*For further discussion of this topic see articles in this Volume on Constructive Work in Primary Grades, and Wood Work in the Elementary Grades.

†For discussion of the topic "Mechanical Drawing," see article with such title, this volume.

colors do not produce the same effect upon his eye as upon ours, and that that time is ill spent which forces him to adopt relations he is not prepared to grasp.

Similarly the subject of Design is to be employed to introduce the child to the elements which make for good taste in all his drawn and constructed work. The same caution given in the case of the work in Color must be repeated here. The young pupil likes to decorate things, but his appreciation of the harmonies of composition is slow and not to be forced. Training in æsthetic appreciation should therefore be a concrete training and the principles of design should appear in the elementary grades applied in concrete form.

THE PERIODS OF CHILD GROWTH: Three periods have already been referred to as divisions to be borne in mind by the organizer of the arts course. The first of these is that extending from the sixth to the ninth year. It may be called the period of childhood to distinguish it from the pre-adolescent stage (nine to fourteen), which intervenes and separates it from the years of adolescence which succeed. The periods overlap and shade into one another. The divisions named correspond very closely with the Primary, Grammar and High School divisions of the common school system.

The Primary period opens with the child just entering school, unless he has already spent a year in the Kindergarten. His play spirit and his readiness to symbolize things is marked. He takes instinctively to making and to drawing, though he elects to draw from memory, reducing forms to symbols with great readiness. His memory drawing is at first chaotic, but under the criticism which he may be led to make of it, rapidly becomes coherent and wonderfully succinct and expressive. Now is the time to give him much opportunity for free expression. His exercises must be related to his interests and should for the greater part call for work only by the larger muscles. Technical accuracy is to be kept subordinate and truth of expression emphasized.

As the child merges into the pre-adolescent stage he becomes self-critical. Expression has outlet in speech as well as drawing. The inadequacy of his efforts dissatisfies him and his work loses the

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naiveté of childhood. Now appears the moment for more systematic drill, for the careful study of appearances and repeated performance of difficult movements that they may become habitual. His constructive desire becomes keener than before, but his sense of beauty of line and harmony of proportion rises very slowly. He is particularly interested in things that are good to use, particularly in things that "go." The middle of this period should see him introduced to the school work-shop where he is at once at home—to the manor born—and submits willingly to regular practice work with tools that he may acquire skill sufficient to attempt some of the many projects which crowd upon his mental eye. His ingenuity is marked. He will do much work at home, utilizing with surprising skill the most indifferent of tool equipments. Now is the hour to introduce him in a practical way to plans, and their elaboration that he may have the means of developing his various schemes.

To outline the characteristics and the training of the adolescent would be of interest, but not relevant to this discussion. It is sufficient to say that as the boy becomes the youth, his every characteristic changes. His voice and personal appearance alter, his mental habits are transformed and as he enters the high-school he crosses the threshold which separates childhood from manhood, and feels stir within him a new imagination and a new life. As adolescent he is more sensitive to blame and praise and has an increased power to appreciate quite beyond his power to express. To him may now be presented, with the probability of their comprehension, those æsthetic elements of the arts which were withheld during his early years.

DEVELOPMENT OF PRINCIPLES: It is a common practice for supervisors to present to class teachers, the various principles underlying the subjects of their course, concealed in a series of exercises. The latter lead logically enough one from the other, but in their making the teacher has played no part. In consequence the principles embodied are apt by her to be very dimly seen. A better method is to present the principles directly and require that she devise exercises to develop them. Illustrative examples may be given, but the more

the responsibility rests upon her of planning for herself, the keener will be her interest and the clearer her insight.

It is to be understood that the principles referred to are not, as such, to be offered to the pupil. The teacher is "by indirection to direct." She determines both cause and effect. The child should not feel or see the machinery of the course. The exercises as such should rise from his needs as he understands them—the principles they embody should be determined by his needs, as his teacher understands them.

CORRELATION: This must maintain between the subjects of the course themselves, and between them and the general curriculum. The more familiar relations between drawing and design, drawing and nature study, etc., it is not necessary to dwell upon. Other and important associations will be developed by the active director.

The general relations of both Illustrative Drawing and Elementary Constructive work have been worked out in much detail in articles already referred to. A highly organized scheme is also presented in the appendix to the article on Woodwork in the Elementary Grades. This contemplates the centering of a large part of a term's work (mechanical drawing, color, constructive and applied design, and actual construction), around some model closely related to the interests of the pupil. In practice this has succeeded well. Similar but simpler schemes may be organized in the intermediate grades and developed in connection with the constructive work (cardboard, textiles, book-binding, etc.) of girls' classes.

COMMUNAL WORK: In the association of the drawing, construction, etc., with other studies, opportunity will frequently offer for securing joint or united action on the part of a number of pupils. This should be taken advantage of and the pupils trained to work together for a common purpose.

The possibilities of such communal work range from the farm-yard of the first year, built on the sand-table, to the elaborate piece of physical apparatus requiring for its construction the united efforts of the brightest shop pupils for weeks or even months.

Community effort in drawing and design may be secured by the

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organization of a school or class paper, or by the planning and treatment of the wall paper, curtains, etc., of a real or model room. Following the recommendations already given, it is suggested that the course be not organized to offer to the class teacher specific problems of this type, but that the general nature of such work be made clear and the teacher herself urged to formulate some plan which will lead to its development.

ORIGINAL WORK: Through communal work the most individual of exercises will be secured. Ideally organized, it looks to see each pupil working on an element of an exercise different from that of his neighbor. Individual work is however to be sought for from the lowest to the highest grade whether or not communal practice is possible. No course can be considered as organized which does not provide for it. The principles already referred to must appear in individual practice.

To secure original work, it will be necessary for the supervisor to indicate in his outlines how technical experience is to be gotten and how it is to be utilized in individual fashion. In the lower grades it will be found wise to have all technical drills immediately followed by free expression, while in intermediate classes, technique may be developed in one lesson and opportunity for expression given in a succeeding one. Thus in the painting of a grass top in the lower primary, the pupils may examine and practice the various elements and then combine them at once, while in a construction lesson in a higher class, a type form as a wagon may be made one day and a class set of individual models the next.

In practice two points are always to be borne in mind. First that no free or original expression is to be demanded until its technique has been mastered, and second that lengthy drills accepted by the older pupil anxious to gain facility, weary and destroy the interest of the little child.

COORDINATION: The particular manner in which this may be effected, will be settled in large measure for the supervisor by the organization of the general course of study. In a majority of cases practically but one road will open, that of developing the arts' course around centers determined by an analysis of the leading subjects of

the general course. This means the adaptation of the arts' course to local conditions.

The Report of the Committee of Fifteen gave to language a leading position among the five centers it recommended. As this report has widely affected elementary curricula, it will be more than likely that the average supervisor will find in the language work of his home course the center to which the arts may, in the lower grades, be most satisfactorily related.* In the intermediate grades the Nature Study and Geography are the most available centers for drawing, while school interests and class exercises offer opportunities for the development of appropriate lessons in construction and design. With "school interests" are to be included exercises arising from holidays and festivals, while "class work" suggests endless problems in spacing and decoration.

In this connection it is to be urged that the supervisor arrange in his constructive exercises to provide for the making of simple portfolios of one kind or another in which each pupil may preserve all his drawings and designs for the term. Such drawings should, like his other exercises, be regarded strictly as his property. Emphasis should be placed upon their preservation that the pupil may note his progress. The very fact that they are to be saved gives them added value and importance.

Forms of co-ordination other than those mentioned will be considered and provided for as occasion permits. The use of the Science-work as a center for advanced construction has already been hinted at. Nature-Study also offers a focus for dozens of exercises in each of the arts. Even as "adventitious centers" these subjects aid markedly in securing definite and unified work.†

But after all is schemed and planned, all organized and arranged, the fact remains that the real course in the arts is not the one spread on paper, or in printed schedules. The real course is that which comes to the child from the teacher. This resembles the planned course

*For a partial analysis along these lines, of the requirements in language in a city curriculum, see article on Elementary Constructive work, this volume.

†In connection with this topic it is recommended that the supervisor seeking definite relations in a general course of study, consider the suggestions offered some years since by Jackman (Ed. Rev. Feb., 1899). These present the subjects of Food, Clothing and Shelter as logical and desirable points of departure.

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more or less closely according as the teacher finds it possible to offer the work as it is arranged, according too, as she comprehends its purpose and is both wise and skilful. All plans however good, must suffer in translation and interpretation. This the supervisor must bear in mind. The course most truly successful is that which develops most naturally, which offers both teacher and child the greatest measure of freedom and presents the strongest incentives to self activity.

But, urge some, why this concern over matters so far beyond our control. What signifies our belief in the value of unification and the solidarity of the arts when our work is so determined that we cannot practice our faith. Such should remember that the greatest agent for good in any effort lies in the unrealized ideal which it embodies.



Primary Drawing

WALTER SARGENT

COURSES in primary drawing may be broadly divided into two classes, as follows :

1. Logical courses.
2. Experimental courses.

The former have been compiled largely after the following fashion. Objects to be drawn, and processes of drawing as well, have been analyzed, and their elemental parts arranged in logical sequence, based on a progression from abstract to concrete, from parts to whole. These parts have then been taught step by step, in the expectation that their sum would result, by some cumulative process, in a knowledge of the whole.

The premises of this logic have been drawn almost entirely from the nature of the subject and with scant attention to the nature of the mind which was to receive the instruction.

The experimental courses have been to a great degree, results of individual protests against the logical systems. The methods of the logical courses are analogous to those formerly employed in teaching reading: namely, progression from parts to wholes, from letters to syllables, then to words and later to sentences. These methods are rapidly giving way to others more in harmony with our modern educational philosophy.

The experimental courses are offering suggestions, increasingly valuable and broad. Psychologists have already made some useful observations regarding these. Of the latter the following are selected for consideration. They are fundamental, and affect the principal phases of primary drawing.

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1. Small children draw naturally and confidently,—a form of expression which disappears later if not developed.

2. Small children use drawing to express ideas which are in their minds, rather than to represent appearances of what is before them. All their drawing is practically memory drawing. They use marks as they use words, and note down their ideas, often with slight regard for the facts of appearance.

Their drawings may be wanting in aesthetic and perspective qualities but never lack *intention*. Primary children are not as a rule interested in the mechanics of drawing.

3. The same pedagogical principles that apply to teaching other subjects apply also to teaching drawing.

These suggestions are worth careful consideration. Both psychologists and less scientific observers of children agree in approving them.

If they are true, it would seem to follow :

1. That an important result of primary drawing is the acquirement of facility in graphic expression, so that drawing becomes a habit before the age of self-consciousness and hesitation is reached.

This facility should not be mere training of the hand, which may be limited to correct performance of certain mechanical processes, but should develop a willingness to undertake the expression of any form the mind can conceive.

A habit of graphic expression should be established by much practice, so children will reach naturally for a pencil when opportunity for pictorial illustration occurs.

The early results may not be artistic but the nerves become good conductors ; permeable to drawing impulses.

When a right-handed person takes a pencil in his left hand and attempts to write, his difficulty is not because of a lack of knowledge of penmanship but because the nerves leading to that hand are not conductors of such impulses, and the muscles receive no encouragement from memories of similar actions previously performed.

Many children reach the grammar grades, left-handed in both hands so far as drawing is concerned. This lack of early training, later practice cannot fully repair.

Drawing rightly taught, becomes a matter of course to children when they reach the age of deliberation. The element of fearlessness, so prominent at first, should never be allowed to die out.

2. It would seem that the chief educational value of drawing for primary children lies in its function as a new language, and therefore as a new power of thought. A new medium of expression, not only offers another means of uttering ideas already possessed, but begets new ideas as well.

In graphic expression, emphasis should be upon the movement of the story to be told and not upon the scientific accuracy of the means by which it is expressed. The grammar of the language should be left till later years. Expression should be for the sake of expression, not for the sake of observing or analyzing its peculiar mode. Hence perspective principles illustrated by type forms have no place in primary courses in drawing. When the question, "How shall I represent this?" arises, then is the time to answer it. It would appear to be a fact that most courses in primary drawing are two or three years ahead of the capacity of the children. In the opinion of the writer, primary drawing should be mainly in the hands of the grade teachers, and closely allied with the rest of the school work. The Supervisor's chief usefulness in these grades, is in visits of encouragement, when he draws with more skillful hand to enthuse and stimulate the children.

3. There is no ground for the superstition, which, even though it is disavowed, still hampers drawing: namely, that that subject demands in a different way from any other, a rare something termed "talent," and that this is possessed actually or potentially by few. This has caused drawing to be looked upon as a subject apart, one not amenable to ordinary principles of teaching.

The supervisor of drawing will find great help in observing the methods of a skillful teacher of language. The work of the latter is a science and an art. There is no aimless effort, no loss of words

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once taught. No fear that later it will destroy the poetical significance of a word, to *learn* it thoroughly, to pronounce it, copy its form and use it over and over till it and its idea are made one in the child's mind. The work progresses steadily. Knowledge is added to knowledge each day.

There is great need for such definite teaching of drawing, which knows what it wants to accomplish, and selects the best materials and methods for that end.

Two lines of instruction in language are followed simultaneously.

1. Language is taught as a means of expression for necessary and daily use.

2. A few words are taught at a time definitely and thoroughly, and continually employed, that they may be made a permanent possession of the child.

Instruction analogous to this would seem to be the ideal method of instruction in drawing, for drawing is a language.

Illustrative sketching has come into general use, and is valuable. It should never be discontinued throughout the school course, and should be an organic element in recitations in other subjects. New elements, however, should be added at each step. The free drawing of many things should be balanced by a succession of carefully chosen topics well taught; possibly in a manner similar to that in which words are taught.

The new steps taken should be seasonable. A good teacher can create an atmosphere for an arbitrarily chosen topic, but it is a needless expenditure of energy.

There is need of making available, the results of many experiments, that we may have more suggestions as to what topics have most permanent value and how the teaching may be done best.

Experiments already tried, suggest that a few typical animals for expression of life, a few toys and other interesting constructed objects, and, in addition, a few geometric relations during the second and third years, furnish good material for definite study. Topics, however, are numberless. A wise choice depends much on local conditions.

When a topic has been selected, it would seem wise to teach it till the children can tell by illustrations, any story expressible by sketches of that topic. This implies ability to draw the object in various positions and under different conditions. It does not necessitate any study of the technical grammar of perspective, but requires graphic expression of the movement of the story.

To the aid of this study should be brought pictures of the subject in hand. The latter should be drawn in various mediums, and arranged in composition to illustrate stories. An occasional hektograph outline to be filled in, aids in correct enunciation of the form. Brush work in water color and black and white, pencil drawing, paper cutting, filling in given outlines, copying, watching while some skillful person draws, all help.

A DETAILED OUTLINE.

As an example the following detailed outline may be of interest. It was used by a primary teacher who experimented with teaching drawing as she taught language, and secured unusually good results.

Grade. First year primary.

Season. May.

Subject. Barnyard fowl.

1. *Preparation.* An interest was aroused in the minds of the children by means of illustrations, anecdotes and personal experiences. The children told their experiences, and illustrated them by sketches when they wished. The children were led to gain a knowledge of the subject through as many channels as possible, so as to have a wide range of view.

2. *Method.* Language, nature study, seat work and drawing were correlated, thereby giving more time for each, and increasing the hold upon the child's imagination, so the subject under consideration seemed to him for the time being, one of the most important things in life.

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This resulted in sufficient knowledge of the subject, enabling children to come to the board and make sketches that showed some expression of life. The children were anxious to show just how their hen appeared when she ran for her breakfast, etc., etc.

One lesson in detail was somewhat as follows :

Subject. General position and proportion of a rooster's body, head and legs, when standing.



Fig. 1.



Fig. 2.

Method. Children were asked to think how a rooster looks when standing. A large picture of one was then shown. Questions like the following were asked :

"Where are the legs?" "Suppose his legs were much farther back (teacher illustrates by a sketch), what would happen?" "Suppose they were much farther in front." (Another sketch.) "Why then are they about under the middle of the body?" Various questions were asked regarding other parts of the body.

A number of children passed to the board and drew a rooster of the type of fig. 1. One, presumably the poorest, was selected for correction. The drawing was discussed, such questions being asked, as, "What is the matter with the legs?" The position of these was then corrected. Questions were then asked concerning

the shape of the legs, the children meanwhile having as reference pictures, and perhaps a real rooster.

Other parts were then discussed: the body, tail, head, bill, etc., were studied and corrected, one at a time by the children. This continued till the children could see nothing more to correct.

Pictures or hektograph outlines were then distributed and carefully studied. The blackboard sketch was compared with these pictures.

One child discovered that he could improve the curve of the back and another the shape of the wing, etc. At last a drawing something like fig. 2 was the result of their united efforts. The teacher helped matters somewhat at the end, by going over the drawing with a strong outline and covering up the joined places. This drawing was left on the board for a while for the children to enjoy.

Later the subject was considered under the following topics for separate lessons. Some came under the head of nature work, but nearly all involved more or less sketching.

Habits.	Legs.
Uses.	Body.
What hens know.	Head and bill.
Disposition.	Eyes and ears.

Comb and wattles.

This order was not the logical one, but that chosen by the children.

At each step the general form was drawn, and the knowledge gained by the study of preceeding topics was applied. The children drew them marked around, or traced a given outline (as a hektograph print) to impress the shape upon their minds.

The relative positions of head, body and legs were next studied.

As seat work the children colored the hektograph outlines, or outlines made by tracing. They also cut to a line the hens, roosters and chickens, previously drawn by themselves.

SARGENT

This was followed by freehand cutting. Here a suggestive line helped greatly towards securing a good result. This line simply showed the axis of the hen's body as in fig. 3, where the slant of the line suggests the position of a hen's body when she is eating.

Papers with the suggestive line upon them were distributed. The children were guided by this and cut accordingly.

Geese and ducks were studied after the same general plan, and compared at each step with hens. What had been learned about the Thanksgiving turkey was reviewed.

Reviews of the topic were sometimes given by asking half the school to sketch the fowl in one attitude while the other half sketched

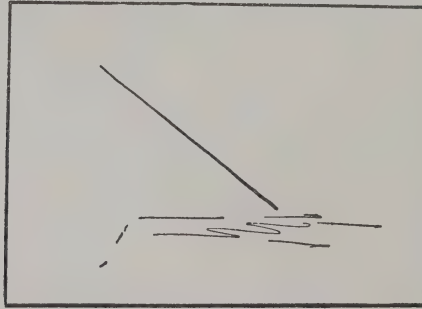


Fig. 3.

it in another. The desire of the children that their side should win resulted in good work.

Each month a large calendar was made by the children. They illustrated it by some seasonable picture which involved the subject under consideration at the time (fig. 4). Every child was desirous to produce a drawing good enough to win a place in the calendar picture. This proved a never failing source of interest, second only to getting a drawing into a framed picture.

Throughout the study of a given subject, the children collected large numbers of pictures. These were used for reference and comparison, and to impress facts already known. The children used these during seat work periods, to compare with their sketches,

and by this means to correct their own mistakes, and to prove to one another that what they reported as a result of their home observation was true.

A large rooster was brought into school and used as reference in cases of conflicting opinions. Blackboard sketches were before the children most of the time. All the children had access to some barnyard fowl which they visited almost daily.



Fig. 4.

One thing well taught as the rooster referred to above becomes a part of the child's graphic vocabulary to be used as a means to express his thoughts. Such knowledge gives confidence to him to proceed to mastery over many others. It also introduces an element of thoroughness and power which illustrative sketching alone cannot develop.

Practice upon a few simple geometric relations is also valuable. Children feel a delight in the mere physical movement of drawing

SARGENT

and observing the resultant visible path of the pencil or other medium. They are interested in the broad sweep of a circle and the steadiness of movement in a long, straight line. They appreciate the self control that is necessary to the desired end.

The best of this interest is lost for small children unless the drawings are large. The size of geometric drawings should be in inverse ratio to the size of the child. His interest is not so much in the thing drawn as in a certain perception of relations. A child, interested in an attempt to draw long vertical lines on the blackboard, is quickening his appreciation of the laws of gravity and balance. Later there comes an interest in problems that deal with the relations of lines with each other, as in drawing one line so that it makes right angles with another, or in drawing lines which are parallel. Mechanically accurate results are not to be expected or desired in primary grades. The practice of repeated freehand efforts is of most value.

At best a child's perceptions of form and its relations will be somewhat vague. The purpose of primary drawing is not so much to perfect these as to give them vitality, and as large an element of clearness and correctness as is necessary to this end. In doing this it will furnish the needed preparation for the more detailed work of higher grades. Later the pupil will come back again to a more thorough study of things as wholes. The scope of the movement of education in any subject is not expressed by the early phrase "from the parts to the whole," nor in the later one, "from the whole to the parts," but rather in this, "from imperfectly perceived wholes, through analysis and synthesis, to correctly perceived wholes."



Constructive Work in the Primary Grades

JULIA CECELIA CREMINS

THE theory which recognizes the little child as a doer rather than a listener includes the belief that his interest in doing should be made educative. Childhood is the budding time of efficient and orderly habits on the motor side—"it is preëminently the time when the child wishes to do things and when his interest in doing should be turned to educative account."* The value of hand work, that is at the same time brain work, is generally admitted. It is understood that in order to grow evenly the pupil must grow in power to execute as well as in power to conceive, and that as he develops constructively he also develops mentally. Upon these principles Constructive Work has been admitted as an essential part of the general course of study.

The place of Constructive Work in the curriculum is defined in the article on The Course of Study and its Organization. It seems necessary here to emphasize only a few of the more important principles. The subject to be truly developmental should be organized as part of the other work of the school. Its relationship to other subjects should be made as vital as possible. When used coördinately with other subjects it serves to relate them and so aids in promoting the unity of the course of study as a whole. It must be looked upon as an agent for developing the child and not for developing exercises.

The older plan sought a logical sequence of exercises. It looked to the increasing difficulty of processes; it added a fold to-day to the fold of yesterday; it required in each succeeding form the drawing of an additional line or the making of a more intricate measurement. Its standard was excellence of execution. It held

* Dewey, J., *The Primary Education Petich*, the Forum, V. 25, p. 311.

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up for admiration the flawless model. It admitted no individuality of thought because it did not think of the individual. It ignored the relationship of the work to the other subjects of the curriculum, to the activities, the occupations, the life of the outside world. So taught it existed for itself—gathered no inspiration, and gave none. Its results bore the word "discipline" on the face of each immaculate box, basket or chair.

The plan which looks to the development of the child does not think primarily of exercises. It considers the pupil, his individuality, his interests, his powers. It looks to the course of study for suggestion and inspiration. It recognizes "that a nice sequence of difficulties in the work is of less importance than the question of motive or the significance of the project."* The work so considered relates itself to the child's world in school and out. It seeks to develop technical skill, just as far as the pupil realizes its need. It holds up as its primary aim, increased power. Its results bear the watchword "individuality" on models planned and developed by the maker and showing in every part his personality.

This plan which looks to the coördination of Constructive Work and to free creative expression may be developed in one of several ways.

- 1: As a center, round which all other subjects are grouped, that is, as a basis for other school work.
- 2: As a coördinate subject in the curriculum, vitally related to other subjects of the course.
- 3: As a separate subject, added to a curriculum made up of separate subjects. In this event it may be made to take its rise from:
 - a. The child's interests and experiences.
 - b. Other subjects in the course of study.

CONSTRUCTIVE WORK AS A BASIS FOR OTHER SCHOOL WORK.

The method of using Constructive Work as a basis for other school work is illustrated in the plan developed in the Training De-

* Richards, C. R., *Handwork in the Primary School*. *Manual Training Magazine*, Oct. 1901.

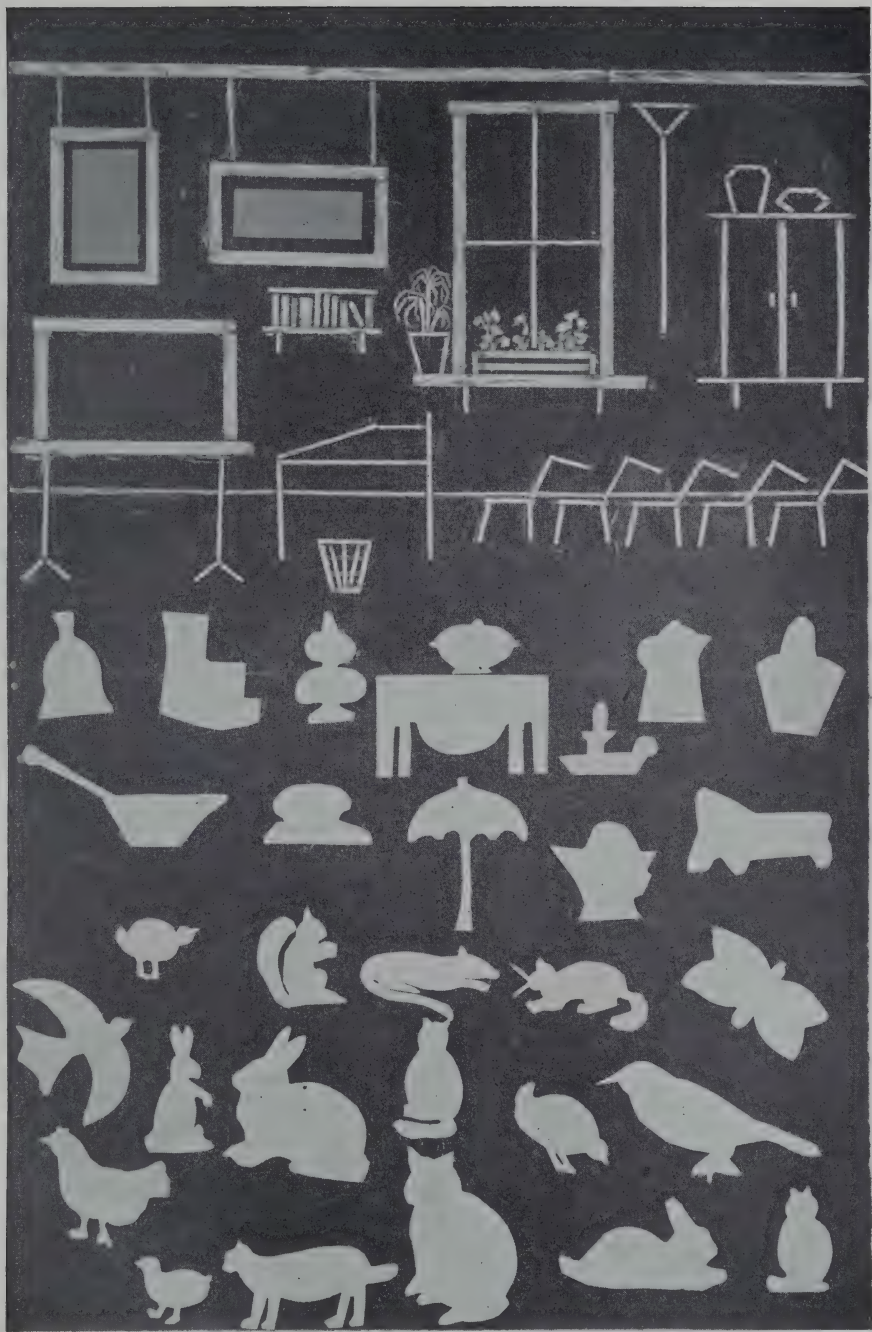


Plate 1. 1st year. Work related to home and local interests and to nature study.

partment of the Hyannis Normal School.* In this school the problem is attacked from the industrial and social sides. The pupils are led through their interest in, and knowledge of their own surroundings, to an appreciation of existing conditions elsewhere. Although all the hand work is done in the afternoon in an additional period added by the school board, the subject is still made the center round which the other studies of the curriculum are grouped. The work includes gardening, weaving, basketry, hammock making and exercises in paper, cardboard and wood.

During one year the Playhouse was used as a center for all Primary grades. The children of the first year studied Hiawatha and compared their own homes and their furnishings with the Indian home and its simple but necessary utensils. The Second Grade pupils studied the industrial and social life of Eskimo, Indian, Dutch, Japanese and Chinese children. In the next grade the home life of the Swiss and Mexican children was considered while the pupils of the Fourth Grade followed the adventures of Robinson Crusoe. Some of the things made were used in furnishing the playhouse. Rugs and portieres were woven in the first grade. Furniture of "tag" board was constructed, and mats of raphia were made in the second and third year classes. The fourth grade children wove blankets and straw matting, made baskets, painted the walls of the house, designed the wall paper and stained the floors.

For those who are at liberty to organize a course of study, this plan is a valuable one. It absolutely insures the unity of the course as a whole. It also offers many suggestions for the development of Constructive Work as related to present interests. It requires, however, unusual conditions, and cannot be adopted except where hand work may be made a central subject.

CONSTRUCTIVE WORK ADMITTED AS A COÖRDINATE SUBJECT IN THE CURRICULUM.

As a type of this plan, in which the Constructive Work is vitally related to the other subjects of the course, the work in the Horace

*See Baldwin, William A.—*Industrial-Social Education*. Milton Bradley Co., Springfield.

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Mann School* of New York City, may be adduced. The Culture Epoch Theory is the one there followed. In the study of the lives of primitive peoples the pupil faces the elemental needs of man—namely, food, shelter, clothing, household utensils and weapons.

In the first grade in connection with the study of the Cave-Dwellers, the cave is built of earth and stones, and furnished with rude utensils of stone and wood. The home of the Eskimo is modeled in clay, and the furniture, utensils, sledge, boat and weapons are all constructed. In the next year when Indian life is considered, looms are made and rugs woven. The Indian village is represented in sand or clay. Later the course suggests the making of rafts, canoes and boats. Early Dutch houses, dress, furniture and household utensils are reproduced.

In this plan Constructive Work takes its rise in the other subjects. It is an essential element in a course which seeks to give the pupil a method of studying and meeting conditions. As such it endeavors to relate the work to the child according to the different stages in his development. While highly suggestive in its broad range of possibilities, it is however, a plan which cannot be followed except where the general course of study is based on the Culture Epoch theory. It contains however, much which may be used in formulating a course under other conditions similar to those noted below.

CONSTRUCTIVE WORK IN A CURRICULUM MADE UP OF SEPARATE SUBJECTS.

The problem of planning a course in handwork when this work has been admitted as a separate subject in a curriculum composed of separate subjects, is one which may be solved in two ways.

1. UPON THE CHILD'S INTERESTS AND EXPERIENCES: This method sees in the child the basis of its philosophy. It considers his interests and his experiences. It looks upon him as a member of society. It endeavors to make the work a result of the study of his environment and takes cognizance of the changes in his grasp and

*Outline of Course of Study for Kindergarten and Elementary Grades. 1902-1903.

ability. It seeks in a word to relate the work as closely as may be to the individual. Says Jackman "It seems to be a proposition of the most elementary kind that in choosing material to satisfy the cravings of the early instincts, it should be taken from the immediate environment of the children."*

Such a course may be developed by taking the following centers as points of departure:

a. *The Home.* This will include home furnishings, occupations, utensils, also the games, toys, etc., with which the little child is familiar. Any of these headings will suggest a long list of exercises, the making of which will afford much pleasure to the pupil, since they are, for him, invested with a personal and lasting interest.

b. *The Community.* On his way to school the pupil has his attention drawn to the work-a-day world about him. He sees on the streets the busy moving to and fro of wagons and carts, of cars and trains. If he lives near the river he knows the boats, and watches the loading and unloading of goods. In the factory district he becomes familiar with machinery and with packing and shipping of material. In connection with these interests and with scores of others which attach themselves to the life of every child, forms can be made fascinating alike in their associations and structure.

c. *The School.* This with its books and its festivals, its lessons and duties, offers a center round which may be grouped exercises both interesting and useful. Booklets and portfolios, invitation cards and calendars, blotter pads and book covers are models which may be made in this connection.

Developed in this way constructive work serves as a valuable agent for introducing the child to a knowledge of the industrial world. It gives him technical skill, and increases his creative ability, but it fails in one of its most important functions, in that it does not relate itself intimately with the general curriculum. It remains an added subject which may be dropped without affecting the other elements in the course of study. As a plan of organization, however, it is one which may have to be adopted, when it is not possible

* Jackman, W. S. *Constructive Work in the Common Schools.* Ed. Review, Feb., 1899.

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to relate the work otherwise. A detailed scheme showing a number of centers for each year and suggesting forms and materials will be found on Page 59.

2. DEVELOPED AS AN ESSENTIAL PART OF THE GENERAL CURRICULUM: The second of the two plans referred to, namely that of relating the constructive work to the other subjects, seeks to do two things of vital importance.

a. It endeavors to relate the work to the child, by considering his interests and environment.

b. It seeks to relate itself so closely to the other subjects as to become absorbed in them. It looks to the Language, Nature Study, Geography and History for the subject matter of its lessons. It aims to make its relationship with the other subjects so close that there can be no question of its immediate bearing and importance.

To reveal the possible development of such a plan we may cite in illustration the requirements of a course of study made up of separate subjects. The syllabus in English in a well-known course reads, (First Year) "Conversations on pupils' playthings, pets, games and outings." This suggests many opportunities for Language lessons which may be supplemented by exercises in construction.

During a conversation on pupils' playthings it would be quite possible to elicit the names of a variety of toys. The little child will take much pleasure in making these on the desk with splints and tablets. He likes to show to his neighbor those things in which both are interested. The fact that the forms are not permanent does not seem to lessen the pleasure of making them.

If the lesson turns on home pets, the cat, rabbit, canary and pigeon will doubtless be mentioned. In illustration of these, some forms may be cut out or modeled and others made with sticks, splints or paper. The cage and bird house may be made with sticks or splints, the bird's nest and the animals may be modeled or the kitchen fire place and furniture built of blocks, or made of paper.

In this grade Christmas forms a central thought for the conversation and reading lessons for some weeks. It offers endless opportunity for constructive work. In the decoration of the school room



Plate 3. 2nd year. The play house,

and the Christmas tree, chains, bells and lanterns may be made. The gifts upon the tree may include Christmas cards, candy boxes, whistle chains, horse reins, baskets, rattles and dozens of other articles closely connected with the home life of the pupil. The class work in design may very properly be developed in this connection and the cards, calendars and boxes decorated in simple fashion with lines or spot borders.

In the course of study previously referred to, we find in the Second Year a requirement that there be "Conversations and Readings on the Home, on Occupations, Holidays and Seasons." Here again we find our opportunity for connecting hand work with other school work.

If the home be selected as a center for pupil's conversations, the furniture, kitchen utensils and toys will doubtless be mentioned. These forms furnish an almost inexhaustible list of things to be made, all of them of deep interest. Little girls will be certain to tell their love of dollies. It is great fun to make these of raffia, or to cut them from paper. The making or cutting of the clothes, the hat, the cradle or carriage offers a delightful series of exercises for small maids. Boys called upon to talk about toys will be certain to mention soldiers, guns, engines, trains of cars. The soldiers may be cut out, the drums made or cut, the engines and cars built of blocks or made of paper.

If occupations are selected as a subject for study, the pupil has his attention drawn to the factory and street. He knows the tools that are used by the workmen, he is familiar with the shops and their wares, he has watched the carts and cars. Here we have material full of suggestion. With splints, paper and tablets both express and delivery wagon, moving van and mail wagon can be simply fashioned. It too, is quite possible that in the neighborhood the pupils may observe the weaving of carpets and rugs. Any one who has watched the small people standing in front of a shop window where rug weaving is done can have no doubt as to the interest this form of occupation holds for them. They much enjoy weaving rugs, curtains and portieres in the class room.

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The Reading Lessons of the Third Year tell of the Indian, Eskimo and Arab, of the Dutch, the Chinese and Japanese. These topics alone suggest material for constructive work for several months. The homes of these people when compared with the homes in which pupils live, the occupations in distant lands as compared with those seen about us, the means of transportation in Holland or China, in Iceland or Japan in contrast with the trolley car and ferry boat of our own land—all offer suggestions for construction in materials of many kinds. The Icelanders' igloo can never be so well illustrated as when modeled in clay, or the cabin so well understood as when built of twigs or of rolled paper. The pagoda and windmill will never be a vivid picture until they have been actually made.

The syllabus of the grade work quoted offers, in the study of local interests, further opportunity for relating constructive work to other school work. The pupils are encouraged to observe the shops in the neighborhood in order to gather material for a composition on the different industries represented. The subjects of these compositions may be capably illustrated "in the round." The blacksmith shop, the wagon maker's, the carpenter shop and the cabinet maker's will suggest a number of forms well worth constructing. Different buildings, the school and church, tenement and private dwellings may be built of paper or cardboard. The pupils will enjoy building as a communal exercise, the village street or city thoroughfare.

It will be noted that the scheme does not attempt to limit the materials used in any one grade, nor does it seek to outline processes. It endeavors to show how subjects of the general curriculum may be made to suggest the exercises which shall be constructed and the exercises in turn made to suggest the materials to be used.

There follows an analysis of the different phases which the scheme presents. The plan includes :

1. Class Work } Type or formal exercises.
 } Free or individual work.
2. Busy Work.
3. Community Work.
4. Home Work.



Plate 4. 3rd year. Work related to home and local interests and to amusements.

TYPE EXERCISES. Type or formal exercises are those which must be made in every class, to give pupils a command of the necessary technique. Several of these class models must be given during the term, their number depending on the character of the forms which the class is to make. Just as often as the central thought suggests a form the surface development of which differs from that which preceded it, it will be best to give the information by means of a type model. In these exercises absolute accuracy can be insisted upon, as the teacher has control over each step. Free work should follow just as soon as the pupil has mastered the process.

As an illustration of this method we may consider the furnishing of a play house. Chairs will be necessary for its kitchen. The pupils should be led to study the chairs in the class room, and to compare them with those at home. The differences between kitchen chairs and other chairs will be noted. Each pupil may then make a model chair. This should give them a working knowledge of the surface development of chairs as they may be made of paper or oak tag. Much emphasis should be placed in this lesson on the necessity for accuracy. If the pattern is to be folded and cut, the proper bringing of edges together and the best manner of creasing them must be shown—the position for holding scissors while cutting and the method of cutting to line made clear. If the pattern is to be measured, the correct use of ruler must be understood. In each case much attention must be paid to the using of paste.

It will be wise to follow this lesson by one in which chairs for the dining room are made. Here individuality in the forms should be secured. The shape of the back may be varied and arms made and placed as the pupil wishes to have them. The general plan of the chair, however, as to size and proportion had better be controlled by the teacher, because it is easier to insist on accuracy if this is done.

INDIVIDUAL WORK. Following the type model, individual work is to be secured by allowing the pupil to make any kind of chair. Here the question of size, proportion, suitability, must be settled by each for himself. If it is decided to make hammocks, rugs or portieres, the exercises in knotting, weaving or braiding should be

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similarly given with a definite view of applying the information in the making of individual forms.

The same idea of Formal Exercises followed by Free Work may be further illustrated in connection with another center. The pupils will be interested to study different means of Transportation. They may be called upon to suggest some, as wagons, carts, cars, carriages, sleds, boats, etc. A type wagon, as a coal cart, may then, as in the case of the chair, be made by the whole class. Special attention should be given to the shape of the body, to the size of the wheels, and the manner in which these are best attached. The desirability of so fastening them that they will turn, should be emphasized, and different ways should be discovered in which this may be done. A second type, as a grocer's wagon, is then to be constructed, and the development of the body of this compared with the development of the coal cart. The third lesson will, as before, be given to free work—the making of any kind of wagon or carriage, car or cart. Each pupil should decide upon his own.

BUSY WORK. In the curriculum of many Primary Schools there are a certain number of periods in which the children do some form of work without direction. This is known as "busy work." No other form of busy work appeals so effectively to the little child as does Construction. With the materials at hand the pupil has an opportunity to exercise his ingenuity. He may make those things in which he is interested, and may show his constructive ability to its fullest extent. If he has made an error in working out a form in class, he is free to reason it out and correct it during the "busy" period. At the end of each class lesson in construction, if he is given an opportunity to see the objects made by his neighbors, he will be inspired with many new ideas. If sticks and tablets are at hand, he will be certain to reproduce some of the forms he has seen his neighbors make, and he will be just as certain to think of new ones. A second year class interested in working out furniture of splints and paper, if allowed to experiment during the period referred to, will turn out many ingenious combinations which have not been suggested during the lesson. Third year pupils interested in wagons,

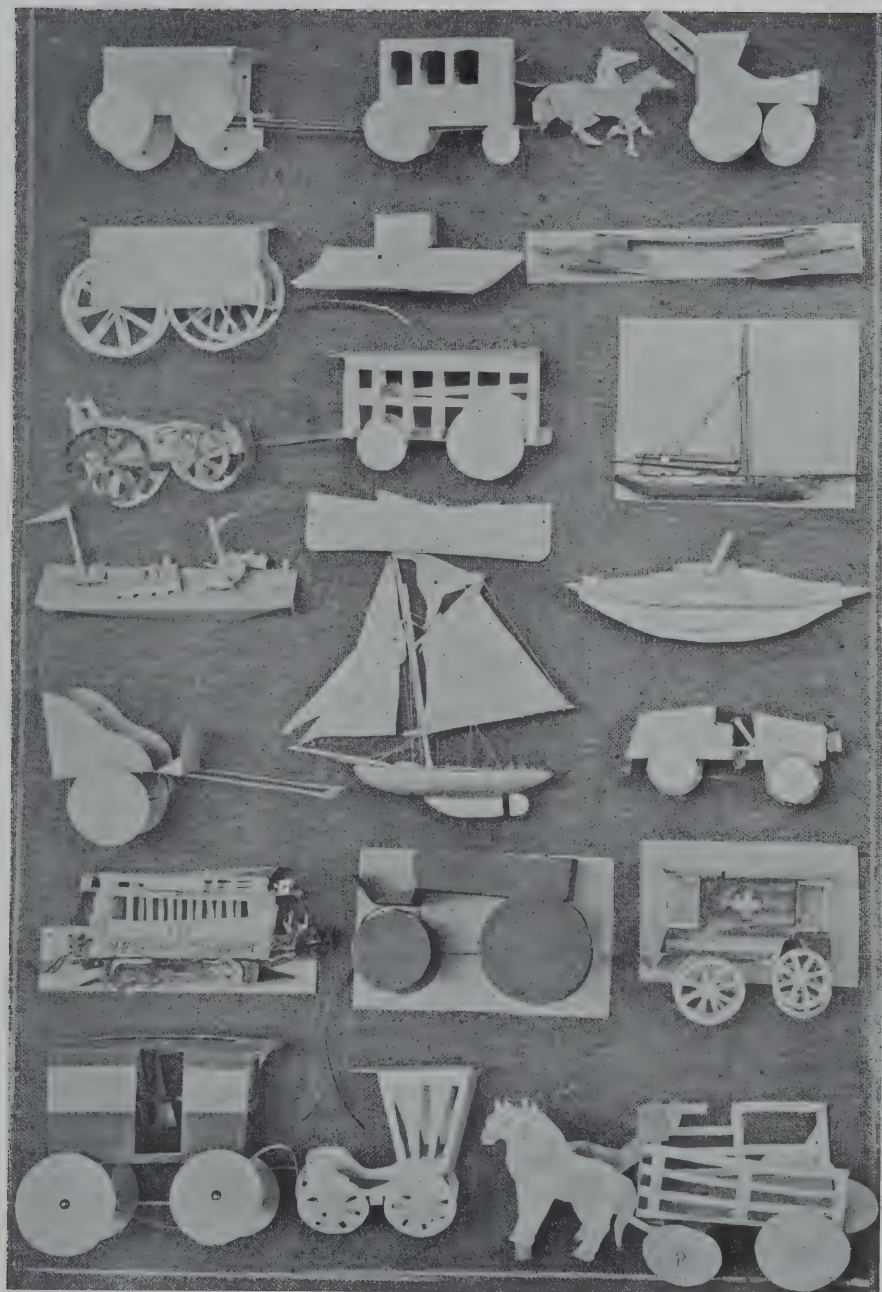


Plate 5. 3rd year. Models developed in the study of transportation.

carts or cars will, if encouraged to work at odd moments, produce as many individual forms as there are scholars.

COMMUNITY WORK. After the pupils begin to work independently it adds to the interest if the various forms suggested by the central thought are gathered or assembled. If the class has been studying the street in the vicinity of the school, the various buildings worked out by different pupils,—church, school, apartment house, etc., may all be placed in their relative positions. To still further complete the illustration, wagons, carts, trolley cars, and carriages may be added.

As a central thought the farm and its occupations are excellent for group work. The ground plan of the farm should be laid out, the fields marked off with stone fences, and the location of the farm house and out buildings decided upon. It will be a good plan to set some pupils to work on the farm house, others on the barn, others still on the well, the chicken coops and bee hives. The best of the forms made in each case may be used in the final group. Wagons, carriages, carts, and plows may also be added, with some free cuttings of animals and people to complete the picture. All of these problems admit of work in a variety of materials, sand, clay, twigs, stones, paper, splints, etc. The illustration may be built in the corner of the class room and the group of models allowed to remain as a topic for study for many weeks.

HOME WORK. Work in school should be supplemented by home work. Pupils encouraged to seek at home their own materials, and to work their way out of difficult situations, become more observant and independent. The light wagon made of paper suggests one of wood. This some of the pupils may be induced to make. Buttons, spools, etc., will be used for wheels. The axles will be fastened with pins, nails or wire. As a whole the result will be astonishingly good.

At times it will be well to request that certain forms be made at home without giving directions as to materials. Ingenious devices will be resorted to by different pupils to complete their models. In one case known to the writer a small lad made sides, floor and roof

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for his house by splitting thin pieces of wood into strips and weaving them together.

MATERIALS AND METHODS.

The ideal course in Constructive Work permits the use of all available materials,—paper, splints, raffia, clay, reed, cardboard, sand, blocks, sticks, twigs, worsted, cord, etc. In such course the operations will be eagerly undertaken, that forms may be made interesting because of their connection with other school work. Knotting will not be taught for the sake of knotting, but because it is essential to the making of a hammock—itsself illustrative of some social study. Weaving will be used to supplement the study of Indian life, and the blanket and rug woven because of their associations. Processes will not suggest forms, but forms will necessitate the mastery of processes.

STANDARDS OF CRITICISM. The constructive exercise should be valued primarily because of its reflection of the pupil's interests and individuality, and secondarily because of its accuracy. The form which does not show some element which the pupil has thought out for himself may be necessary on account of the technical skill it gives, but it is less important than that which gives the pupil the opportunity to create. Not faultless accuracy, but childish effort should be the standard. The teacher should not dominate but freely guide the pupil. Above all not the production of exercises, but the development of increased power should be the end.

The following suggestive scheme is offered in explanation of the plan already detailed of developing all constructive work around centers related to the life and experiences of the child. It presents certain centers for each year, suggests exercises in connection with these and names processes and materials. While it does not pretend to be complete in any respect, it is believed that it will be found helpful to any one wishing to develop constructive work along the lines referred to.

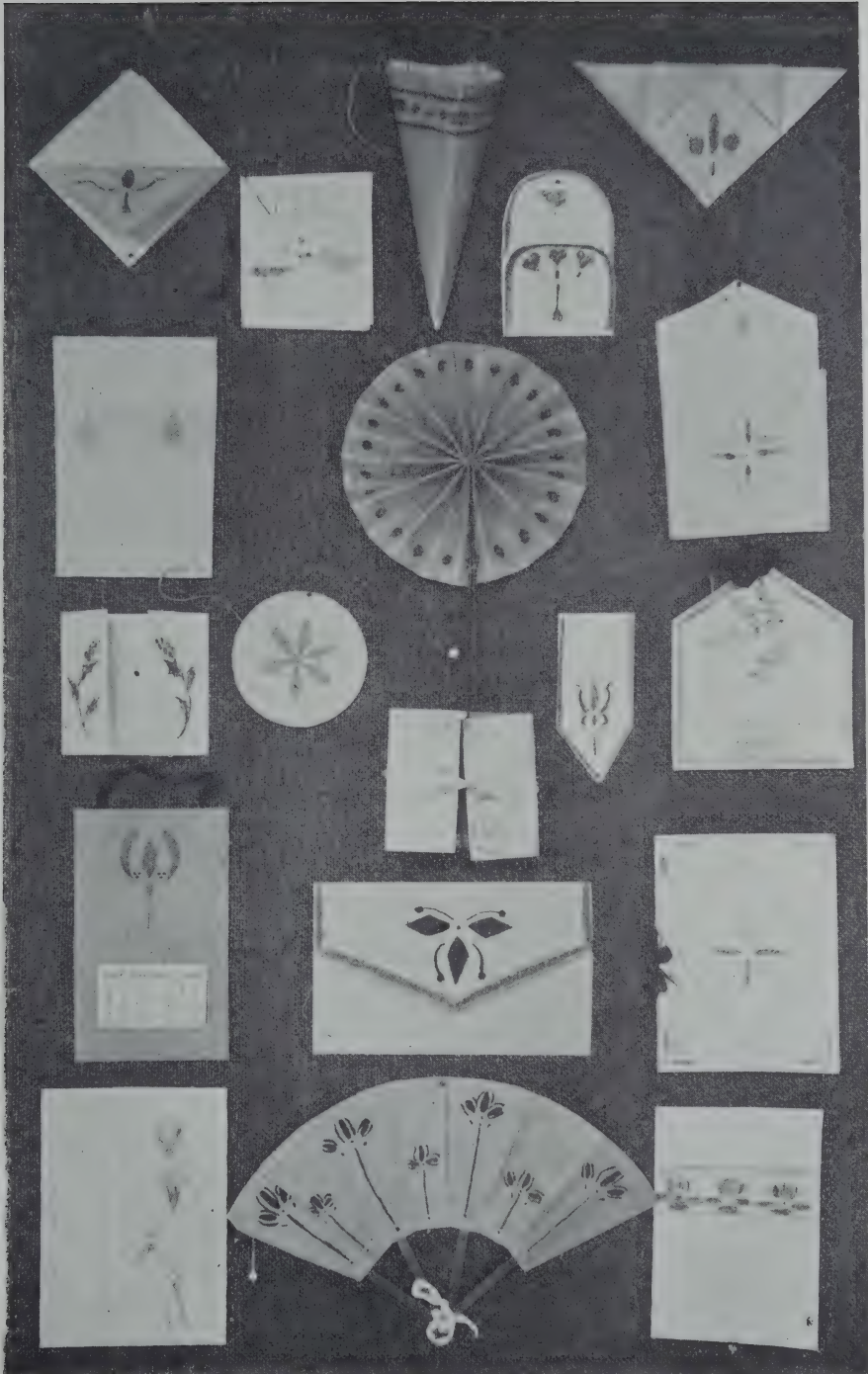


Plate 6. 1st, 2nd and 3rd years. The relation of constructive work and design to home and school interests.

FIRST YEAR

CITY AND COUNTRY LIFE

Home Interests

(Sticks, splints, toothpicks, peas, tablets, wire.) Pail, bed, stove, house, table, cradle, chair, dishpan, bureau, high chair, mantel, tub, broom, bench, sink, cupboard, candlestick, coal scuttle, shovel, kite, churn.

(Paper folding or weaving.) Holiday cards, cornucopia, envelope, tent, lantern, furniture, sled, box, basket, kite, mat, pin wheel, kitchen utensils, flowers, valentine, cradle, fan. (Free cutting or tearing.) Valentine, doll, nature forms (plants, fruits, vegetables, animals, pose), dolls' clothing, furniture.

(Raffia.) Balls, broom, napkin ring, mat, doll's hat, basket, picture frame.

(Cord, shoestring, yarn, beads.) Knotted chains, handles for baskets, braid in chain stitch and knots: scissors' cord, horse reins, curtain holder, hammock, rug, portiere.

School Interests

(Sticks, splints, toothpicks, peas, tablets, wire.) Window, window pole, door, desk, chair, numeral frame, flower pot, book, door mat, picture, window box.

(Paper folding or weaving.) Window, booklet, picture frame, cupboard, envelope, chain, calendar, desk, seat, bench.

Surrounding life. In street and vicinity

(Sticks, splints, toothpicks, peas, tablets, wire.) Ladder, wagon, cart, horse car, trolley car, sled, gate, fence, bridge.

(Paper folding or weaving.) Boats, windmill, cars, basket.

SECOND YEAR

CITY LIFE

Home Interests

(Paper folding or weaving.) Mat, box, furniture, doll's house, hanging basket, cornucopia, match box, clock, picture mount.

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(Free cutting.) Animals, plants, fruits, vegetables, kitchen utensils, doll and doll's clothing, valentine, Christmas card, weather flag, calendar.

(Cord, shoestring, yarn, tape, beads.) Watch fob, rug, mat, shopping bag, needle book, chain.

(Raffia.) Chain, braid mat, whistle chain, matting, hammock, cord bag, book mark, picture frame, napkin ring, basket, box.

(Paper and splints.) Fan, furniture, wall pocket, match box.

School Interests

(Paper folding or weaving.) Envelope, book cover, book mark, portfolio, box, holiday cards.

(Cord, shoestring, yarn, tape, beads.) Weaving tape, bed spread for doll's house, rug, portiere, bag.

Transportation

(Paper folding or weaving, paper and splints.) Wagon, cart, car, sled, wheelbarrow, bridge, boat.

(Free cutting.) Trolley car, wagon, bridge, boat, sled.

Amusements

(Paper folding or weaving.) Kaleidoscope, sled, kite.

(Free cutting.) Animals, clowns, performers.

(Paper and splints.) Circus: tent, wagon, seat, cage, banner, swing.

Occupations

(Paper folding or cutting.) Street cleaning: shovel, water sprinkler, dirt can, lamp post and letter box, and package box.

(Free cutting.) Horse and cart, hammer, saw, plane, hatchet, watering can, shovel, broom.

(Paper and splints.) Shovel, cart, hod, tent.

Shelter

(Paper folding or weaving.) House, stable, bird house, tent, ferry house.

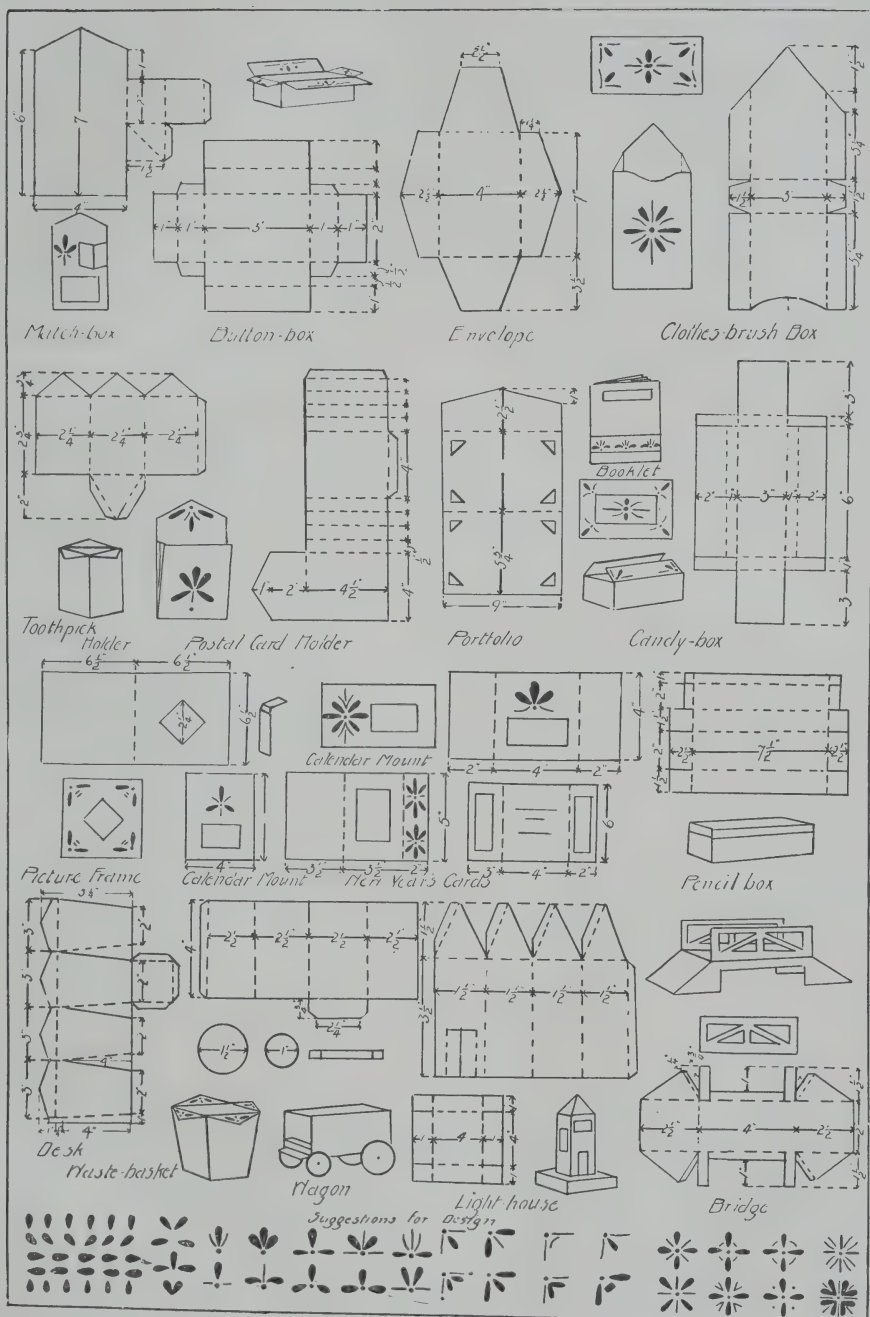


Plate 7. Suggested patterns for type models.

COUNTRY LIFE

Home Interests

(Paper folding or weaving.) Post box, churn, milk stool, butter tub.

(Free cutting.) Farm implements, kitchen utensils.

(Cord, shoestring, tape, yarn, beads.) As in city life.

School Interests

(Same as city life.)

Transportation

(Paper folding or weaving.) Wagon, cart, sulkey, carriage, omnibus, sleigh, boat, bridge, sledge, R. R. car, letter carrier's wagon, bob sleigh, canal boat.

Amusements

(Paper folding or weaving.) Tent of circus, sled, ice boats, horse stalls.

(Free cutting.) Animals in the circus or fair, clowns, performers, merry-go-round.

(Paper and splints.) Tent, seats, cages for animals, banners, kites.

Occupations

(Paper folding or weaving.) Plow, fence, bee-hive, basket, anvil, wind mill, bucket, barrel, crate, berry box, lobster pot, fish flake.

(Free cutting.) Farm implements, hammer, saw, horse shoes.

Shelter

(Paper folding or weaving.) House, church, school, post-office, shop, hotel, R. R. station, factory, mill, pottery, village complete, cabin, hut, tent, cottage, gate lodge, bee hive, hen house, corn house, barn, ice house, greenhouse, bird house.

CREMINS

THIRD YEAR

CITY LIFE

Home Interests

(Paper.) Furniture: chairs, bed, cradle, kitchen utensils, basket, box, picture mount, book mark, match strike, calendar, picture frame, doll house.

(Paper and splints.) Furniture, fan.

(Raffia, cane, worsted.) Dolls' hats, duster, belt, basket, piazza cushion, cord bag, shopping bag, picture frame, napkin ring, table mat.

School Interests

(Paper, paper and splints.) Envelope, portfolio, pencil case, book cover, book, weather record.

(Raffia, reed, worsted.) Mat, basket, box.

Means of Transportation

(Paper, or paper and splints, or wood.) Railroad cars and engine, trolley car, coal cart, ice wagon, horse car, cab, truck, wagon, coach, bicycle, automobile, push cart, boats, sled, ambulance, bridge.

Amusements

(Paper, paper and splints or wood.) Theatre, cage, seats, tents, merry-go-round, kites.

Occupations

(Paper, paper and splints or wood.) Camera, push cart, teacher's desk, anvil, meat block, blacksmith shop, carpenter shop.

(Raffia, reed, worsted.) Mat, basket, box, rug, portiere, curtain.

Administration

(Paper, paper and splints or wood.)

Street cleaning—Sprinkling cart, wagon, dirt can, broom, shovel.

Parks—Band stand, seats, summer house, gymnasium, boats.
 Fire Department—Engine, hook and ladder, engine house.
 P. O. Department—Letter box, package box, mail wagon,
 mail bag.

Forms of Shelter

(Paper, paper and splints or wood.) Houses of primitive peoples, hut, tent, cottage, church, railroad station, ferry house, factory, school, office building, fort, Post office.

COUNTRY LIFE

Home Interests

(Paper, paper and splints, wood.) Coal scuttle, furniture, kitchen utensils, farm implements.
 (Raffia, reed, worsted.) Same as city life.

Transportation

(Paper, paper and splints, wood.) Bridge, wagon, railroad car, cart, carriage, boat.

Occupations

(Paper, paper and splints, wood.) Plow, threshing machine, churn, butter tub, hay wagon.
 (Raffia, reed, worsted.) Same as city life.

Amusements

(Paper, paper and splints, wood.) Circus tent, merry-go-round.

Forms of Shelter

(Paper, paper and splints, wood.) Farm house, Post office, railroad station, well house, granary, hot house, blacksmith shop, boat house, summer house, flour mill, saw mill.

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Constructive Design

ERNEST ALLEN BATCHELDER

DESIGN is the bringing of abstract ideas into tangible form. We may design a poem or a house, a song or a chair. In any case we are confronted by a problem involving three prime considerations,—(1) the idea must be present; (2) we must have a technical knowledge of the material in which the idea is to be expressed; (3) we must know something of the fundamental principles of design if beauty is to be attained in the result. The three are inseparable, each imposing limitations which must be studied from simple beginnings. Says Violet leDuc, “The first condition in effective design is to know what we wish to do. To know what we wish to do is to have an idea; to express that idea we require principles and a form.”

We are considering design in its relation to handiwork. In the study of design then we may adopt two motifs with a single aim:—(1) study our material and through experience learn something of its limitations; (2) study the elementary principles of design, line and area composition, proportion and tone relations. We shall thus learn to think in terms of paper, wood, clay, metal, etc., in order that suitable ideas may be aroused, ideas that may be expressed under the restraint of appropriate materials and with the guidance of sound principles.

In teaching the subject we seem to have adopted a convenience which subdivides the topic into three classes: Pure Design, Applied Design, Constructive Design. These divisions must be more or less arbitrary for there is a continual merging from one to the other. In Pure Design we have the development of elementary principles. Pure Design teaches us the use of straight and curved lines, the cutting of areas and subdivision of spaces, rhythm, balance, harmony;

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we acquire skill in controlling materials, patience, and power to look beyond immediate work, application in the accomplishment of a desired end. But every principle acquired through Pure Design should be given continued application. The elementary idea of balance has little value in the abstract; it must be applied in every possible way that school work allows.

Constructive work, pure and simple, involves a discipline through tool work in patience, accuracy, a valuable training toward orderly thinking in overcoming difficulties. But if manual work stops with this aim its worth is far from being realized. It is not sufficient that a boy at various points of his career may be called upon to make a box which seems to emphasize an important principle of construction. The box should also stand as an index to progress in design, showing an increased thought for line, proportion and appropriate ornamentation. Pure Design is not enough; Pure Construction is not enough. It is when the two are embraced under the broader term Constructive Design that we have the full value of each and may try to entertain "love of good and beautiful work as applied to useful service," and attain a "development of individual character in connection with artistic work and the raising of standards of beauty in objects of use." These are the "Principles of Handicraft;" and they come very close to a worthy ideal for the teacher of manual work.

Is there a boy or girl who does not enjoy the work? If such there be it is the teacher or the method of presentation that is at fault, not the subject. The interest becomes real as soon as a boy finds that he is making something distinctive, something which may bring, in a comparison with his neighbor, qualities other than mere accuracy of construction. In both design and constructive work the follow-copy idea must give place to individuality, not complete freedom, for the mature mind is best fitted to appreciate the sequence from an idea to the finished product; but individuality may be encouraged within the limitations of a stated class problem. It is not how nearly like the copy can your work be made, but how many consistent variations of the copy may be secured.

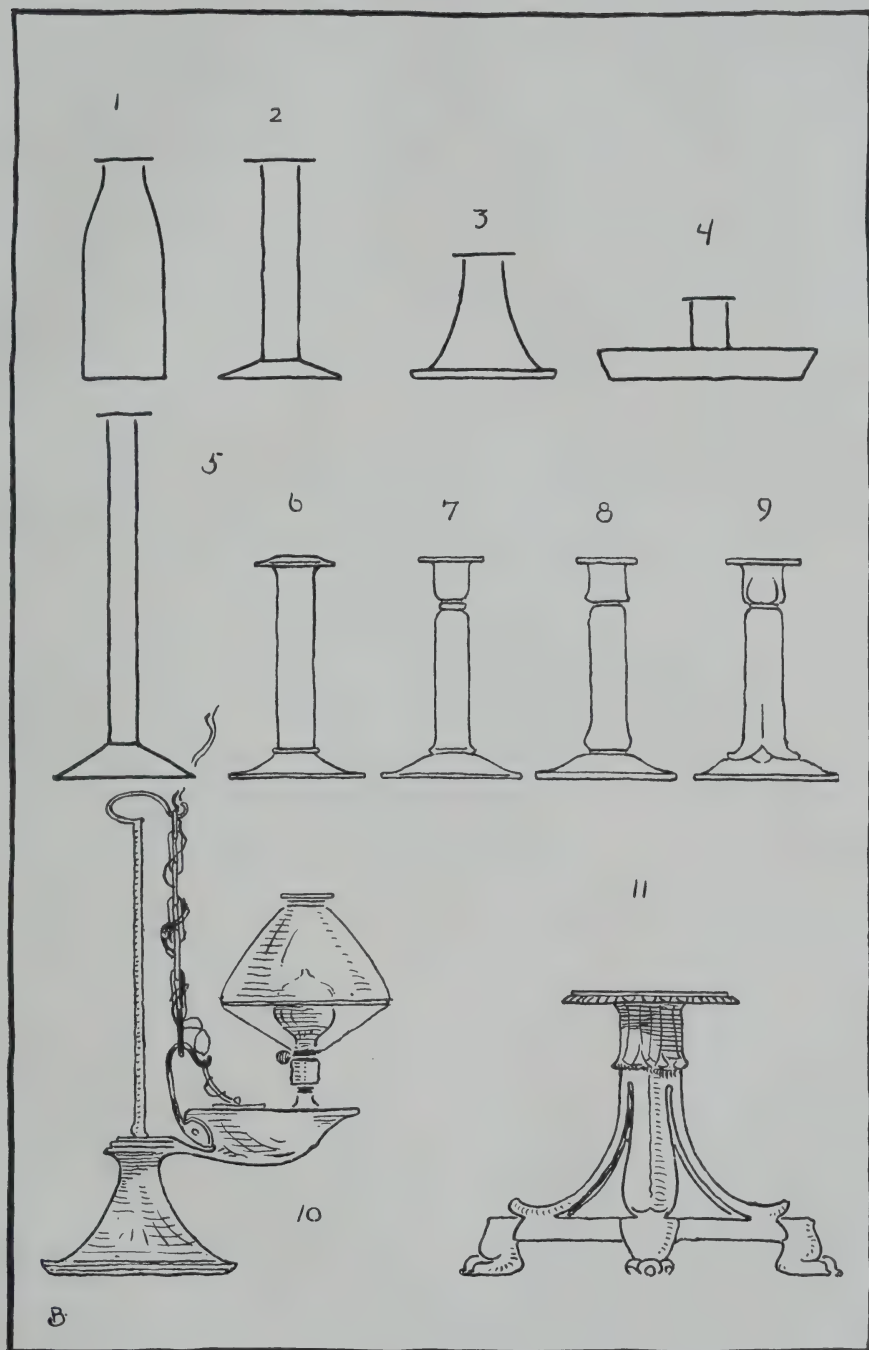


Plate I.

Let us examine a bit of Constructive Design.

In Fig. 1 is an Indian basket. It was made to perform a useful service. It entered into the Indian's daily life as an essential feature of house keeping. It is well made, as any one may find to his despair if he would attempt a similar piece of work ; constructed with all the cunning skill that the Indian alone has mastered, from grasses and ferns and willow twigs gathered and cured as long experi-



Fig. 1.

ence taught. This is construction, a problem of utility well solved. But more than this ! Into the texture of the basket there is woven an expression of the maker's sense of beauty. Without this last, the basket would still be servicable ; but with it a servicable article has been made beautiful, the making of it has ceased to be a task, daily toil has been ennobled. The basket will not be mislaid ; its owner

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can pick it from among a thousand and will always be proud to identify it. In this simple basket we may see the place of Constructive Design in educational work. It is our belief that a thing well conceived, carefully, thoughtfully executed, and made beautiful according to present knowledge, must be counted as a step toward better thinking, better living, a more complete life.

We have been trying this long time to bring a more intimate relation between design and constructive work; but the realization generally falls short of our ideals. Too often it is to be feared we throw a boy upon his own resources before his experience enables him to think in terms of either design or construction. How shall we begin, how combine the two? In the kindergarten, when we plaited colored papers, we were given a choice of two colors with which to work. Some of us chose red and green, others thought red and blue prettier. However, it was much nicer thus than that we should all be weaving the same colors in the same way with accuracy alone as the test of a task well done. We do not outgrow with curls and plaids, this satisfaction in distinctive work. It is human nature, the difference between mind and instinct. The element of choice leads to the individual initiative, started in the kindergarten and continued throughout all handwork.

For a long time ideas and suggestions may emanate from the teacher. The things that a child would like to make are generally in advance of his ability to execute in a craftsman-like way. A course there must be, not hung upon the wall or blue printed in consecutive numbers, as a task to be completed before an original idea may venture to assert itself. The question of choice may appear at all times even in simple problems of constructive work. Here is a pencil box. A simple affair planned to emphasize some principle of construction. Even supposing the dimensions to be alike in all the boxes made:— it is to be stained; what color shall be used? It is to be lined; shall it be felt or leather? With these small elements of choice an individual work has been made. Throughout the work any suggestions from a pupil involving a change or modification of either construction or design of a piece of work should not be

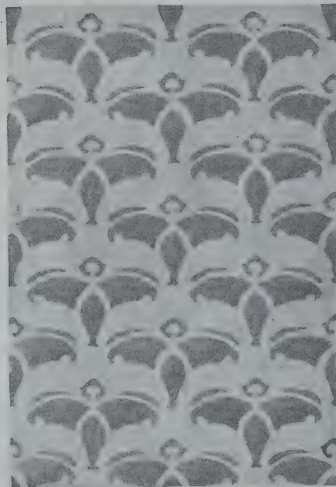
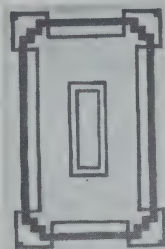
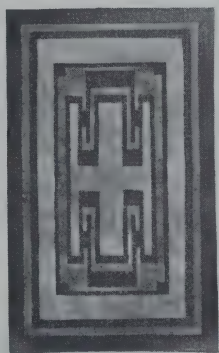
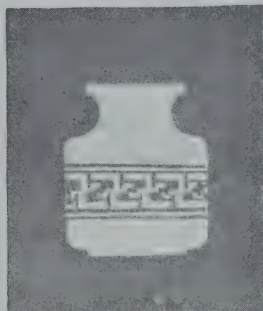
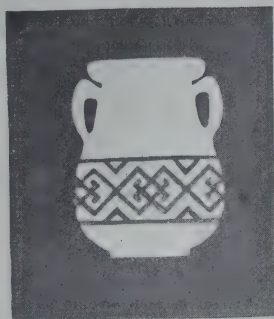


Plate 2.

repressed, but encouraged, even watched for as the tiller of the soil scans the skies for refreshing rains.

For instance, there is a model which occurs with remarkable regularity in various published courses of manual work, a flower stick to be thrust into the ground to support a growing plant. It must be just $14\frac{7}{8}$ " long, $\frac{1}{2}$ " square, $1\frac{3}{8}$ " taper, $\frac{1}{4}$ " bevel, notches $\frac{1}{8}$ " wide and exactly $\frac{1}{2}$ " apart on centers. But why all this accuracy? Why, indeed! Because teacher says it must be made like that and if it is not we may have to do it over again. In other words the accuracy is imposed from without; it does not come from within. There is nothing in the nature of the model which calls for any such dimensions. All plants are not the same size. May it not add interest to the problem to make a stick for a plant rather than hunt about for a plant to fit the stick?

As a basis for the solution of a problem in Constructive Design let us first think of use, then of beauty, as noted by Mr. Bailey in his contribution to the Year Book of 1901.*

- (1) Use.
- (2) Beauty of Construction.
- (3) Ornamentation of Construction.

Each step must be frankly met and solved. If we think of use alone and neglect beauty something is lost; if we seek beauty without sufficient consideration of use more is lost; if we would add ornament without the foundation of the other two, everything is lost.

Use leads us unerringly to the elements of sound construction. In questions of utility common sense is the arbiter. Use determines largely the essential elements of the object, its form, size, material and process of making. If common sense were always allowed to judge these matters, particularly as to material and form, many senseless gew-gaws would be consigned to the waste bin and the days of fad and fashion would be numbered.

Beauty leads us back to the elementary principles of design. An understanding of these principles is essential to a pleasing re-

* The Principles of Constructive Design.

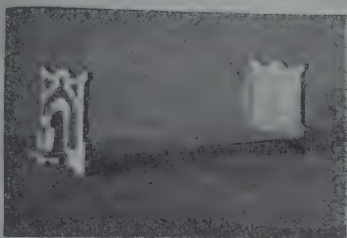
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sult. Beauty of Construction must first receive attention, the general proportions of length, breadth and height; the essential elements demanded by use may be refined, the constructive lines may be modified. Without taking the third step we may now have a beautiful piece of work. Use never demands ornament; it must stand upon its own merits and justify itself if it can. If it is not consistent, subordinate, in harmony with material and environment it has no justification.

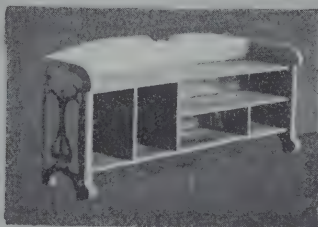
If we will study the development of any art in history we shall see the logic of these various steps; and in the decline of any art we may note violations.

Along this line of thought let us design a candle-stick, for use by all means but beautiful as well. A candle-stick has a definite use: to hold a lighted candle securely in an upright position; there should be some way of catching the drip in order that table tops and carpets may not be ruined; there may or may not be a handle; it must be of such shape, size and stability that there will be no danger of upsetting. A candle-stick may be made from various materials, but the question is, which material is most suitable. Glass and china will break, wood will burn; so let us choose metal—iron, brass or silver. Rough sketches of these essential features might result in Figs. 1, 2, 3, 4, Plate 1. These express the general idea,—candlestick. They contain the essential elements of utility. But it is only poverty or immediate necessity that remains content with usefulness alone. Men demand beauty, each according to the measure of his taste.

The first question of beauty suggests a study of general proportions. Which is better, Fig. 2 or Fig. 5? Supposing we choose Fig. 2. Can we not refine the various parts with lines that will soften the angles and add something of interest? Figs. 6, 7 or 8 may result. Now if we still feel that further enrichment is desirable we may develop ornament along the lines already secured. It must be subordinate, as if it were a last lingering touch from the craftsman's hand. Thus we might attain to the distinction of owning a beautiful candlestick without the necessity of seeking an antique store.



1



2



C.F. Eaton - Santa Barbara - Cal.

3

In Fig. 10 the process is reversed; common sense was not considered a necessary factor here. It is a sketch from an "elegant Roman style lamp," recently seen in one of the shops. It was the designer's evident intention to build something unique regardless of consequences. It is almost inconceivable that purchasers can be found for such things, yet such must be the case else the making of them would cease. In Fig. 11 the return is made to a sound development of an idea; it is probable that the dealer would classify them both as "elegant" without ever worrying over such abstract problems as use and beauty.

Let us follow the development of two problems in constructive design in which an opportunity for enrichment by carving was

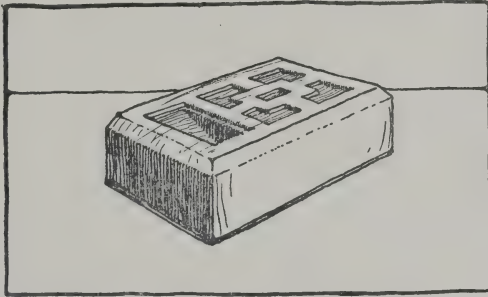


Fig. 2.

offered. The work was done by two boys occupying adjoining benches in a seventh grade sloyd room. Up to this point both boys had made:—working drawings, copied from instructor's work; working drawings with modifications of shapes and dimensions from instructor's blank drawings; working drawings directly from blank models, in which modifications of lines, proportions and dimensions were encouraged; working drawings from perspective sketches without a model suggesting features of construction and design. Thus they were prepared to discuss features of construction, proportion and design from sketches, translate the results into working drawings and construct their models. Their experience in wood work consisted of two years' training averaging one hour per day. They

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had done very little carving. In Pure Design they had worked in lines straight and curved and areas with a working knowledge of elementary principles. Their work in design immediately preceding the problem in constructive work is shown in Plate 2. Fig. 1 called for a straight line border, on Japanese paper over squared paper, with a balance of black and white. The design is seen in its finished state applied to a pottery form in which distinct attention was given to proportions, curves and measures of subdivision. Fig. 2 was a straight line cutting of a rectangle. Fig. 3 called for the cutting of a stencil and its repetition over a surface. This involved the cutting of an area into spots by means of curved lines. The study of straight and curved lines and the cutting of areas had the closest connection with the problem at hand.

The problem called for a book rack and a paper rack in hard wood with suitably carved ends. The question of carving had first to be solved. Experience alone defines the limitations of an art. Two simple pieces of work in carving were planned (Figs. 2-3). The first was a paper weight with carved top, felt or leather on the bottom, into which lead was placed to increase the weight. The problem in design was worked out as in Plate 2, Fig. 2, a straight line subdivision of an area. The second bit of carving occurred on a teapot stand with tile set in at top, felt or leather on bottom, carved border of curved lines. With the above experience as a capital we were ready for a further venture. Plate 3 shows the work completed. We are reminded of the Indian basket; a useful article has well made from "love of good and beautiful work applied to useful service."

In an envelope labelled "Bookracks" were found various sketches, photographs and pictures illustrating ways in which a bookrack may be constructed. Such material is essential to the teaching of design and may serve as a basis for intelligent discussion of a subject. An examination of the sketches brought a decision as to the type of construction desired. A discussion of strength at once eliminated one or two forms. That selected was then drawn, (to scale one-half size) two views showing front and end sufficing.

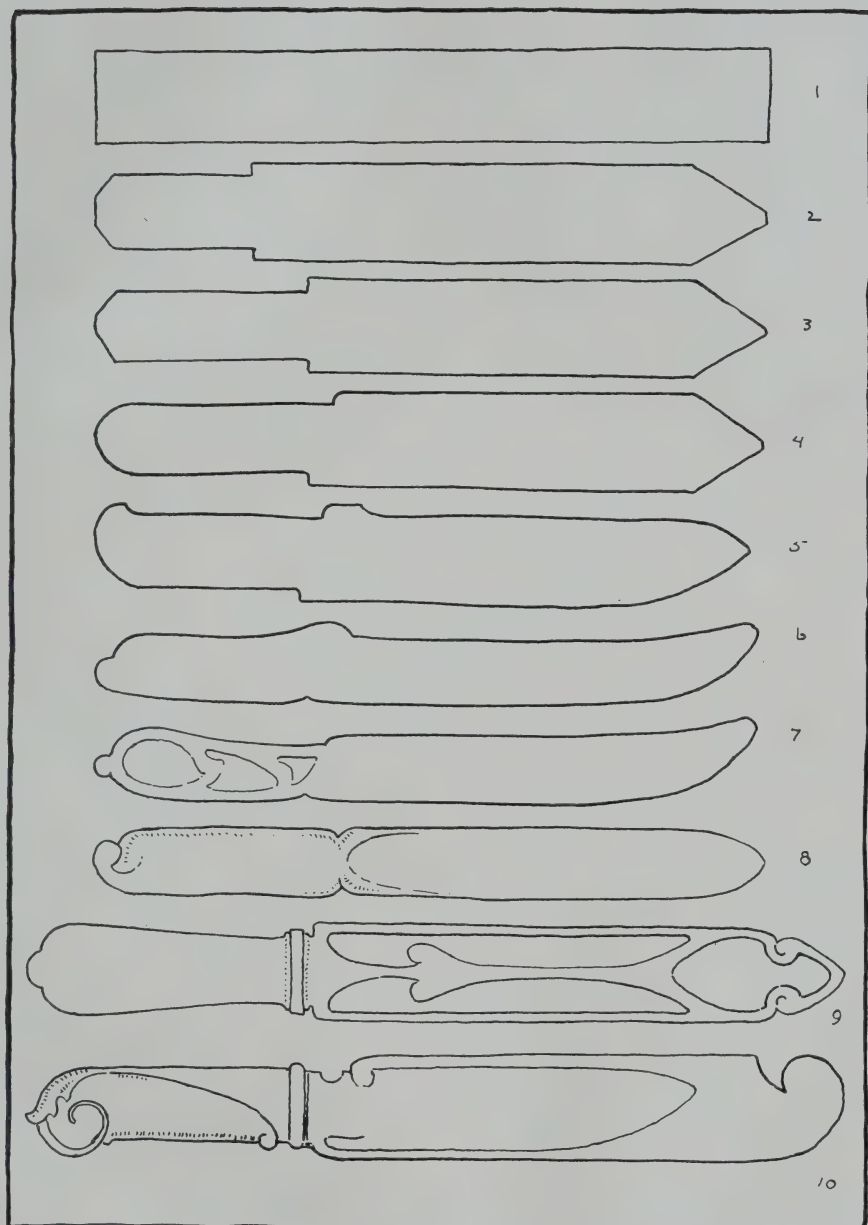


Plate 4.

The end view presented a rectangle to be modified by slight refinements that would make it more interesting. Full size rectangles were drawn on a piece of paper and the modifications cut out in order to see how the end would look when completed. From two or three such cuttings a selection was made. Then came the design for carving, in this case a problem very similar to the stencil shown in Plate 2, i. e. the subdivision of an area into spots to be cut away.

Had the subject been a paper knife, similar questions of use and beauty would have arisen. As before, sketches and pictures bearing on the subject, would have been consulted. A chart to Plate 4, would have been offered. Fig. 1 is a blank form, the raw material.

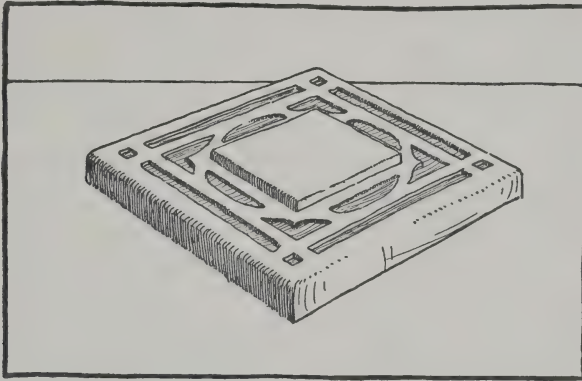


Fig. 3.

In a form like the knife, use demands the essential elements of handle and blade. At the point where they join the grain of the wood must be preserved to insure strength. In Fig. 2 there is too much blade, not enough handle. Figs. 3 and 4 present better dimensions; 5 and 6 give refinements of these elements as do 7 and 8, in which slight ornamentation occurs. Carving and burning both offer decorative possibilities. To carve the blade would weaken it; the end of the handle, for this reason is a desirable place for ornamentation. Figs. 9, 10 carry the problem to a conclusion in which use and beauty are consistently united.

In no line of manual work is there greater need of serious thought along the line of Constructive Design than in wood carving.

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To carve the ends of a bench which is to be built in a factory is antagonistic to the simplest teachings of Constructive Design. If the pupil is unable to construct the object he is going to ornament, or at least to plan, and oversee its construction, he is unprepared for the work and should return to simpler paths.

So far as the teaching of Constructive Design is concerned a great variety of occupations is not needed. A course in basketry, in cardboard, in whittling, bench work, carving, forging, is good. Each occupation contains tool processes adapted to the ability of the boy in the advancing grades of school work. But if each course is isolated, unrelated to the others, it is valuable only through the tool processes employed, and fails to fulfil its best function.

In Plate 3, is a writing cabinet made by a present day craftsman. "Made" is indeed the proper term, for this worker has made from raw material everything that may be needed to complete this chest, even to such mechanical devices as hinges, springs, lock and keys. Here, then we have an assembling of many tool processes in the completion of a piece of work. As a "project" it illustrates the spirit of true craftsmanship. A desire to construct something "good and beautiful" has made patience, accuracy and orderly thought a necessity. It is a correlation of "courses," a connection between things useful, mechanical and beautiful. We all may become more or less proficient as wood carvers; but carving should be but one step toward the completion of a piece of work. We should study carving only when we feel the need of it as a means of ornamenting a piece of constructive work. The process of carving is a means toward an end and not an end in itself.

Plate 5 remains to be explained. A box is often found to be a desirable possession, as well as a convenience through which certain principles of construction may be taught,—boxes for nails, pencils, handkerchiefs, gloves, collars, tools, silverware, jewelry, etc. Useful boxes may be made for these and other purposes, involving a variety of forms of construction; but more than this,—down the long list of boxes we have an opportunity to combine with use, beauty through refinement and ornamentation of constructive lines. Wood,

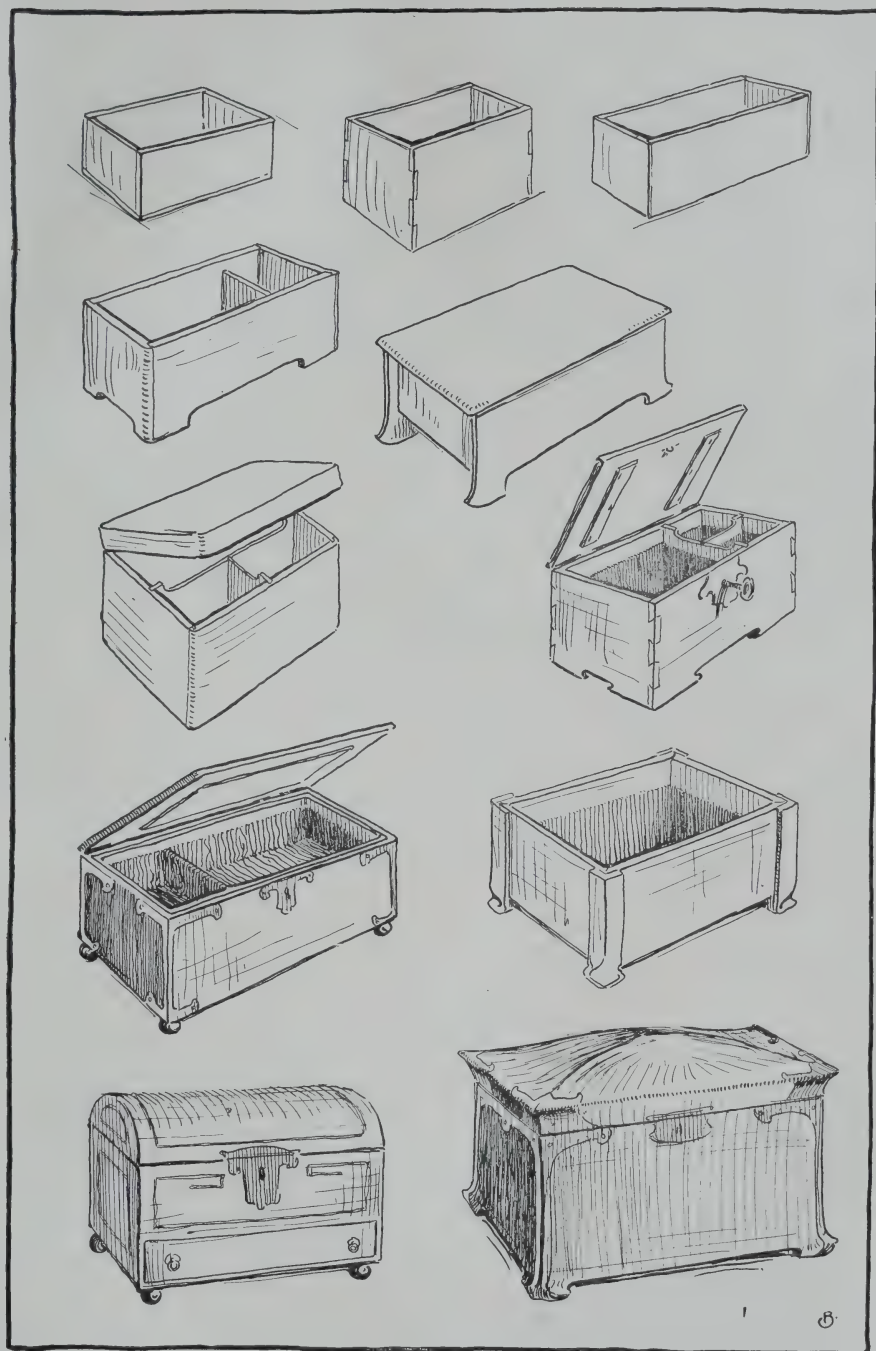


Plate 5.

metal, felt, leather, inlaying, carving and burning may each enter into the question. If we wish a course in metal hammering let us begin at the point where copper corners or a lock plate are wanted for a box. Let us bring together at every opportunity through Constructive Design, tool processes which show a decided tendency to isolate themselves. Constructive work is in need of enrichment through design, and on the other hand the subject of design may be greatly strengthened by a closer correlation with problems of construction.

The ideal condition is that in which all the work may fall to the same teacher. A logical conclusion may then be given to ideas gained through a study of problems in design and in construction. The manual training teacher of tomorrow must be a craftsman in all that the term implies. His knowledge of matters constructive and technical must be wedded to an artistic temperament, supplemented by a clear understanding of the principles of design.



Woodwork in the Elementary Grades

EDWARD D. GRISWOLD

WOODWORK is but one of the many forms of constructive work in the elementary grades. Properly taught it should supplement the teaching of other forms of such work. The same principles underlie all of these forms. They seek to take advantage of the child's constructive instincts, giving him a knowledge of constructive principles and processes.

Woodwork in the elementary grades should not be a means for "training of the hand" but "training by the hand." The first seeks automatism, the second development. The teaching should demand the coördination of the mental and physical powers in every operation. The purpose of such instruction is rather to determine the stimulus or atmosphere in which the motor activities of the adolescent may develop, than to organize a specific form of instruction with woodworking tools.

At its inception woodwork was not related to the curriculum in any vital way. It was in the course of study but not of it. Partly because of this and the technical ideals for which it stood, the early organizers of courses in shop practice sought above all to secure a logical order in the use of tools, and a regular sequence of manipulative processes. Exercises demonstrating principles of construction were carefully graded. Technique and finish were given more importance than the pupil's ability to make use of constructive processes in an original way. Not unnaturally these framers of courses looked with favor upon joints and practice exercises as forms which embodied the desired constructive principles. With older pupils, the use of these models to teach the technique of tool work was found to be fairly satisfactory. Such pupils were prepared to accept this instruction, realizing that the principles taught were of more

importance to them than the objects made. With younger pupils, however, this practice failed. Success with them depended upon the fostering of inherent interests and the giving of opportunity for individual expression. From the search for methods which should meet with these conditions there has arisen a new form of practice in the elementary school. A deeper appreciation of the manual arts in the school has gained ground and woodwork has profited thereby. Its value as an aid in the interpretation of other subjects of the curriculum, its use as a developmental agent, and its direct appeal to the child, better understood, it has come to occupy a new place in the curriculum.

PRINCIPLES OF ORGANIZATION

A course in woodwork should respond to the pupil's interest and his growing power. It should be coördinated with the other work of school and should be concrete in its application.

The pupil's development should be sought along mental, physical and social lines.

MENTAL DEVELOPMENT: Opportunity should be given to increase the pupil's power of reasoning and the facts offered should increase his store of knowledge. The practice given should develop his powers of observation, and the models made should so appeal to him through the method of their presentation that he may be led to investigate forms of construction without the school walls.

He should be taught to separate a model into its parts for the purpose of determining the principles of its construction. It is through such analysis that he develops the habit of investigating the material world about him.

The practice of woodwork should develop imagination. This when coupled with an understanding of constructive principles makes creative work possible. Opportunity should be offered for the making of exercises of the child's own planning. In the early stages of his work, the exercises he designs may be crude, but as he comes to a better understanding of underlying principles they will assume a better form. The pupil should be encouraged to make drawings of

things he wishes to construct, submitting them to his instructor for criticism, and then carrying them out at home. The construction of an automobile or a mechanical boat that will go, calls for much imagination on the part of the maker. For him it is as much of an invention, if he puts his materials and principles of construction into new relations, as is the designing of a new form of engine by the engineer.

The problem of securing individual work is one which in many school systems offers no small difficulty. Whenever possible in a shop work course opportunity should be offered to the pupil to make his model individual. This may be done even in the case of practice exercises by requiring certain changes to be made. If a marble board is to be chiseled the openings may be varied by the pupil. If a coat hanger is to be made, each may make his hanger of a size to fit his own coat.

In the shop a backward pupil of the class-room may discover a power to plan and do equal to that of his more promising fellow student. A feeling of increased personal power comes with this discovery. This means added self respect and greater self confidence.

PHYSICAL DEVELOPMENT: Woodwork should train the motor activity and coördinate this activity with the mental. Woodwork offers such opportunity to the adolescent in a form which is both economical and practical. It trains in skill and accuracy through tool manipulation. It increases the coördination of hand and eye and makes the eye the servant of the hand. The special value of such work to the physically clumsy or mentally deficient is seen in the work of institutions for the crippled or feeble minded.

SOCIAL DEVELOPMENT: A course in woodwork should develop the social relations. It should reveal to the child his relations to his environment. Through this a more complete revelation of self is possible. We must conceive of work in wood and metal and the like as "methods" of life, not as distinct studies. "We must," says Dewey, "conceive of them in their social significance, as types of the processes by which society keeps itself going, as agencies for

bringing home to the child some of the primal necessities of community life, and as ways in which these needs have been met by the growing insight and ingenuity of man."

The social spirit may be developed and mutual helpfulness promoted by offering opportunity in the shop for the construction of "community" or "communal" models in which several workers take a part. Their social significance may be emphasized by offering opportunity for the construction of articles to be used in the school. Other forms may be made which will help in furnishing the home. Through such work the child is brought into close relationship with his environment, and he comes thus to a better understanding of the place he may fill in the life of both school and home.

CORRELATION: Woodwork so far as possible should be developed in relation to other branches of the curriculum. Any exercise to be constructed may be the object for which a mechanical drawing is made. Through such relations the drawing comes to have a definite meaning to the pupil. He sees its direct bearing upon construction.

The shop practice may be related to design. Models which afford opportunity for appropriate decoration may be so enriched. Others may be made the basis of lessons on constructive design. Like the lessons in mechanical drawing, those in the teaching of design take on an increased interest when the pupil can see a purpose in his study.

It is through the introduction of models directly related to the other subjects of the curriculum that the greatest opportunity comes for correlation. The models may be related to the work in physics, nature study and mathematics and help in the explanation and demonstration of these subjects.

NATURE OF EXERCISES: The exercises for the elementary grades should not be abstract. The principles of construction should be embodied in practical models. These should be of such proportions that actual use may be made of them. Much of the interest which construction has for children in the elementary grades attaches to this attribute.

OUTLINE COURSE OF STUDY

In arranging a course of study in wood work, the models selected should be in accordance with the foregoing principles. They should be presented in such order that the processes of construction will increase in difficulty as the pupil gains in ability to do. They may relate to various subjects in the curriculum: some to the course in mathematics, some to that in physics, or in nature study. Where the work is not thus related, models for use in the home or in the games of the children may be made in number.

The following order of development in constructive processes is suggested: (See Plate 1.)

First term, simple models, of one piece, giving practice with the plane, try square, marking gauge, saw, and chisel. If the models consist of more than one piece, simple butt joints are to be used.

Second term, introduction of half lap joinery, end mortise and tenon, and housed joints.

Third term, exercises requiring the use of templets, lock and finger joints.

Fourth term, through mortise and tenon, miter, and open dovetail joints.

All of these principles of joinery may be offered in the form of useful models, and individual modifications of these as to their dimensions and outlines may be secured without difficulty.

The half lap joint, for example, appears in the form of a flower pot holder, ring toss, or Christmas tree stand; the housed joint in the form of a book rack, or photograph holder.

At first, it will be sufficient to bring the pupil to an understanding of manipulative processes and principles of construction, without calling upon him to determine individual modifications. Later he should be called upon to determine both size and form, together with the principles of constructive design. His models developed under these conditions will offer abundant opportunity for the display of originality and personal initiative.

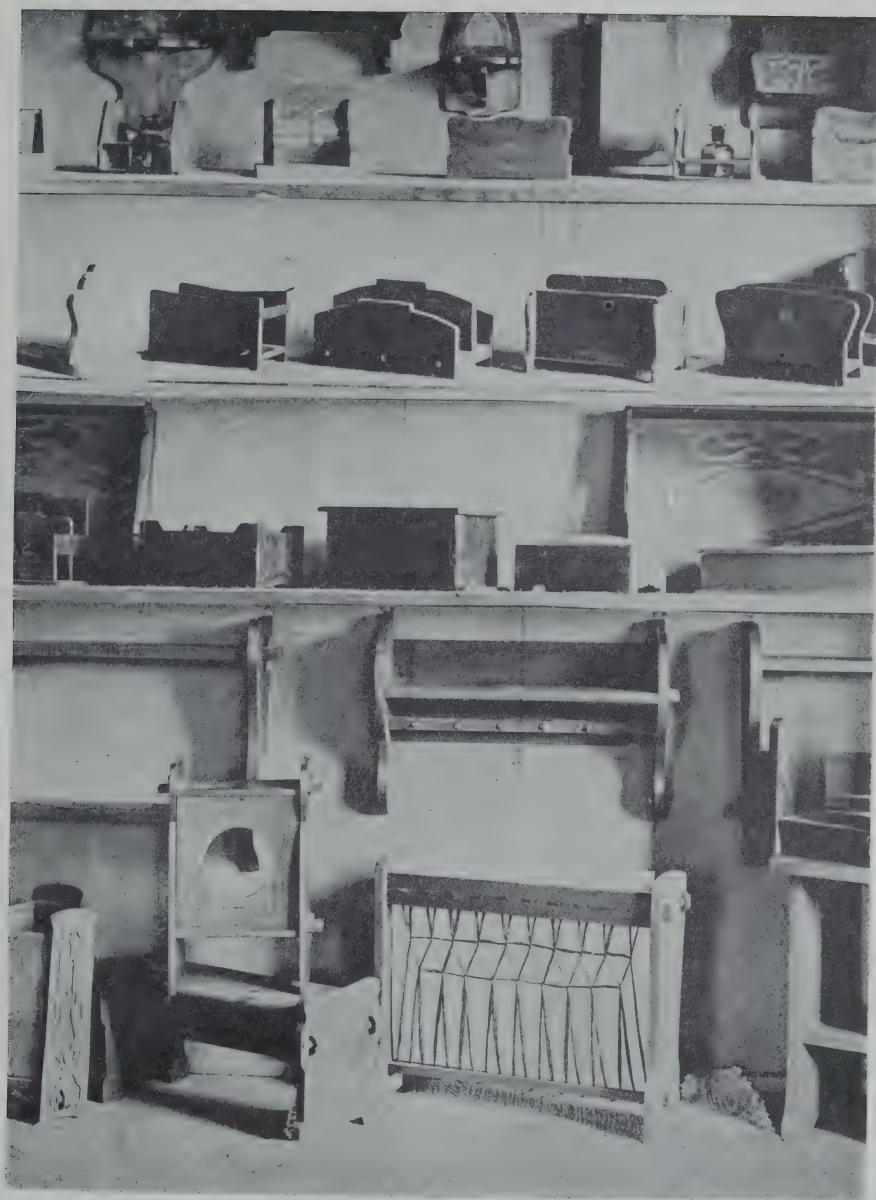


Plate 1. Typical models for four grades.

PRACTICE

Success in the practice in shop work depends largely upon proper methods of presentation. Such methods may be considered under the heads of Analysis, Demonstration and Execution.

ANALYSIS: A model to be made, when first presented, should be analyzed and the steps necessary for its construction indicated. In this connection the necessity for a working drawing appears. By a comparison of model and drawing the pupil can easily comprehend the meaning of the latter, and the manner in which any required dimension is to be determined. The drawing thus comes to have a new meaning. It appears as a source of information, and its value to the mechanic as a means of conveying information in concise form begins to be appreciated.

It is necessary that the pupil know the name and character of the material with which he is to deal. He must understand that wood consists of fibers bound together, and that it cuts or splits easily with the fibers or grain, and with difficulty across the grain. He should be led to perceive the relation of this fact to the laying out of exercises. The means of identifying wood should also be explained, and he should learn to recognize various familiar woods at sight.

DEMONSTRATION: Since most models require more than one shop period for their execution it becomes necessary to divide their demonstration into a series of steps, each one of which should be complete in itself. Such explanation should outline the method to be followed by the pupil in planing, gauging, etc. In the earlier lessons it will be well to have the steps in construction of model, written down by the pupil that he may refer to them.

Tool manipulation in the carrying out of these steps should be shown. Let us consider for example the smoothing-plane. Its name should be given, also the names of its principal parts. The method of setting it should be shown and the position to be taken at the bench when planing is to be done. Several pupils should then be called upon to demonstrate the process of planing. The same

GRISWOLD

general plan should be followed with all tools as the necessity for their use arises.

Many devices are in use to aid pupils in their first efforts. Most of these like the use of the "false line" or "waste line" in chiseling are designed to cause the pupil to work slowly and with care. In illustrating these to pupils, the latter should be made to understand that they are offered as aids in construction, unnecessary after the pupil has gained a mastery of the tool.

EXECUTION: After demonstration comes execution. This should show understanding of the steps of construction, and ability on the pupil's part to follow them in order. Such knowledge and ability are to be judged from the neatness and accuracy of his work.

The sequence of tool presentation is fixed primarily by the course of study. No fixed rule for such sequence can be stated, save to the effect that no tool should be demanded by the course of study, beyond the pupil's physical strength to handle, or ability to comprehend. A tool should be presented when there is a demand for it. It should then be analyzed and its use explained.

TECHNICAL STANDARDS

There should be standards of technique which the pupil should approximate as closely as he is able. All practice exercises should be finished by tool only and should stand as evidence of the pupil's ability to handle tools. Technique, however, should not be made a fetish in any course in woodwork; accuracy should be an aim in all construction, but since the physical enters so largely into this matter, the critical judgment of work should take into consideration how much of constructive interpretation as well as exactness of tool manipulation has entered into it; how much of the pupil in other words has been put into the work, and how far it represents his best effort. If it does represent such effort, be the work ever so crude, it should be commended. It has served its purpose as a developer of motor activity, and to that extent has benefited the doer.

It is the custom in many shops to allow the use of finishing devices such as sandpaper, etc. Such practice if early followed,

has a tendency to lower the accuracy of tool manipulation. The pupil soon discovers that "pretty near" may be made "quite" by a little rubbing with sandpaper. Finishing devices are therefore to be deprecated as the pupil will not do his best in the handling of any tool if he has still another to fall back upon. The worker should be made to feel that each process requires all the skill he can command.

HOME WORK

Much may be done to increase pupils' interest in construction by leading them to attempt exercises at home. These exercises may or may not be the same as those which have been made in school.

When a home project has been completed it should be brought to school for criticism by the instructor. The errors of construction should be pointed out to the maker and the general technique criticised. All ingenious effort should be particularly praised.

Interest in home work may be fostered by the formation of Craft's Clubs among the pupils, the requirement for admission being the construction of a specimen of craftsmanship to be passed upon and accepted by a committee of fellow pupils. The holding of exhibitions where the home work may be seen by teachers, parents and other pupils and the interesting of friends to the end that notices of successful projects may appear in local papers, will help develop this important phase of shop practice.

The value of home work is many sided. Through it the life of the school may be much more vitally connected with the life of the home. Parents become interested in the work of their children and learn through such interest more of the work of the school. The child's knowledge is clarified and fixed by such work. In it greater opportunity offers for the exercise of originality. More independence is developed.*

* *Exercises Relating to Home:*—Towel racks, knife boxes, scouring boards, salt boxes, book racks, book shelves, tabouretts, stools, match boxes, flower-pot stands, paper racks, cup and saucer racks, plate racks, paddles, sleeve board, large ironing board, sink settle, step ladder, chopping board, clothes horse, Christmas tree stand, wooden buttons, hat and coat pegs, music holders, frames, screws. Boxes:—Letter, spool, cuff and collar, glove, blacking, stamp, work, nail and screw.

GRISWOLD

Many or expensive tools are not necessary for home work. All pupils should be urged to get a few that their constructive knowledge may be utilized in their life without the school. The following are sufficient for practical purposes. Knife, hammer, try square, cross cut saw or back saw, screw driver, smooth plane, rip saw, brace and bits, rule, oil stone, nails, screws, sand paper, and glue.

COMMUNAL WORK

Many models valuable as aids in teaching physics, nature study, etc., are of such a character that considerable time would be necessary for their construction if they were to be made by a single pupil. For this reason instructors often hesitate to undertake such work. It is, however, quite possible to divide the construction of these models among several pupils, each working from a detail drawing. The value of this community work lies in the interest always excited in the pupils by "team play," and in the altruistic motives which are emphasized. There comes through it also, an appreciation on the part of each pupil of the necessity of accuracy in his own construction, that the elements of the forms he makes may fit those made by his fellow workers.* (See Plate 2.)

SCHOOL EXHIBITS

School exhibits should be made primarily for the arousing of interest in the work among both pupils and parents. Either the entire work of the term, or if space will not permit selected exercises

** Models for use in physics:—*

1. *Sound*:—Sonometer, organ pipe, sounding box, siren, vibratory transmitter.
 2. *Light*:—Angle of incidence, sun dial, theodolite, color wheel, pin hole camera.
 3. *Mechanics*:—Balances, pulleys, levers, frames of various kinds for apparatus, wheel and axle, inclined plane, specific gravity balance, bridge, wedge, sliding pendulum.
- Models for use in Nature study*:—Vivarium, aquarium, caterpillar box, butterfly mounting boards, butterfly cages, butterfly mounts, plant press, window boxes, root cages, shelves and brackets for plants, labels and trellises for plants.

Models for use in Mathematics:—Cubic inch, cubic foot, liter, yard stick, meter stick, abacus' dry measures, model of room for illustrating carpeting, plastering, etc., illustration of squaring and cubing a binomial, sections of planes for teaching plane geometry.

School Room Aids:—Crayon box, board rubbers, blackboard rulers, sand trays, drawing boards and T squares, blackboard protractor, bulletin board, parallel ruler, supports for drawing models, small blackboard with staff, pencil and pen boxes, boxes for rulers, compasses, etc., frames for holding paints, palettes and brushes.

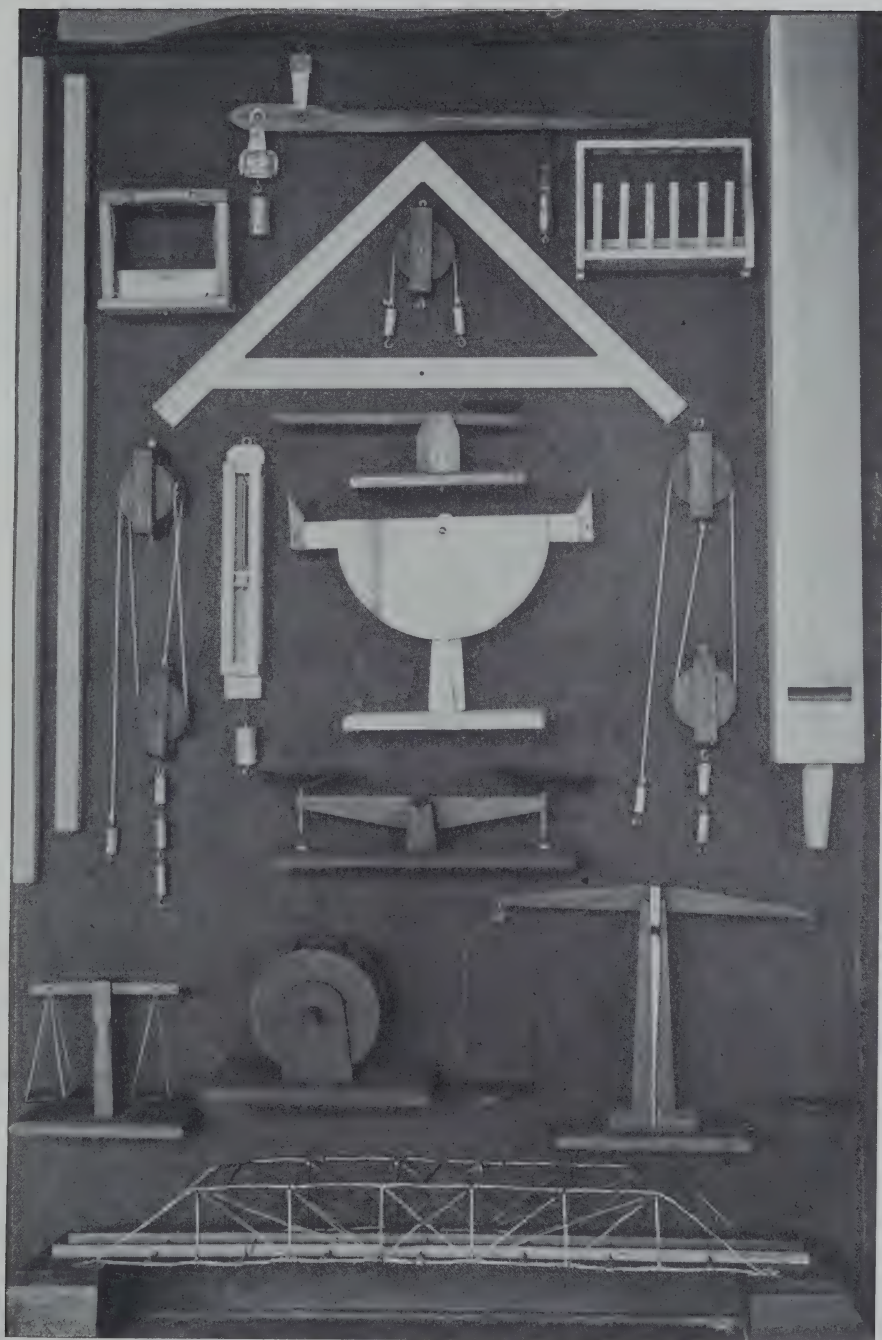


Plate 2. Communal Models,

may be shown. The pupils should be encouraged to examine the work carefully that they may compare their own with that of others, and thus see the relation it bears to the entire work of the course. Exhibitions of this kind do much to place parents in sympathy with the work. They then can see it as a whole and have its object explained. Such exhibitions are easy of arrangement in small cities with few instructors. In larger cities centers can be arranged where typical work from various schools or districts may be brought together. A small collection of models, with drawings and designs, should be kept in each shop for the illustration of processes both to pupils and visitors. Specimens of woods having a direct relation to the work of the shop should be a part of this shop exhibit.

WORK SHOP LIBRARY

A work shop library should have a two-fold purpose. It should be an aid to the teacher in the preparation and presentation of lessons and a reference library for pupils to which they may be sent for additional information.* Much supplementary material may be collected, classified and arranged by the pupils. This may include magazine articles and newspaper clippings.†

But while books are helpful, something else is needed in every workshop to spell success. Light, air and an adequate equipment will aid, but above all there is needed a teacher who is more than a demonstrator of tool manipulation — one who realizes that the pupil is greater than the thing he makes; that his attitude toward his work is greater than his technical skill; that his understanding of principles of construction is greater than construction itself.

* The following list of books is by no means exhaustive but names some of the more generally useful:

Theory of Educational Sloyd	<i>Solomon</i>	Wood Working for Beginners	<i>Wheeler</i>
Manual of Hand and Eye Training	<i>Goetze</i>	Boy Engineers	<i>Lukin</i>
Sloyd System of Wood Working	<i>Hoffman</i>	Among Machines	<i>Lukin</i>
Bench Work in Wood	<i>Goss</i>	The Young Mechanic	<i>Lukin</i>
Primer of Forestry	<i>Pinchot</i>	The American Boys' Handy Book	<i>Beard</i>
Practical Forestry	<i>Gifford</i>	How to Make Common Things	<i>Bower</i>
The Principal Species of Wood	<i>Snow</i>	Home Made Apparatus	<i>Woodhull</i>
Bent Iron Work	<i>Erskine</i>	Strength of Material	<i>Merriman</i>
Useful Arts and Handicrafts	<i>Todd</i>	Exercises in Wood Working	<i>Sickels</i>

† See — An Industrial Library — Richards, A. W.; Manual Training Magazine, July, 1903.

APPENDIX.

The following suggestions are made regarding the development of models which shall serve to coördinate the work in construction with that in mechanical drawing and applied design. Each model selected for this work should be a form which may be decorated with propriety. It should be offered to the class in the form of a type model, plain as to outline and rectangular in form. The pupil makes a free hand sketch of this type. Upon this sketch he introduces dimensions of his own, keeping within such limitations as may be prescribed. Variations of two to three inches are as a rule sufficient. In early work variation of only one dimension is best. The next step is the modification of outline, if this is to be undertaken. For this purpose the pupil prepares a rectangular templet the size and form of the unmodified part. He then, with due attention to the principles of constructive design, modifies the outline. Simplicity of modification should always be the rule. (See Plate 3.)

The templet when prepared is used in the shop to mark out the modifications. A careful mechanical drawing should be made from the working sketch. A design appropriate for the work to be decorated is then to be prepared and treated to such tones as are appropriate for wood.

In the shop the model is constructed from the free hand sketch, the templates being used in laying out the modifications of outline. The model is then sand papered, the design is painted and the form as a whole stained. For stains it is best that but few colors be used. Burnt umber, burnt sienna, bronze green, chrome green, and black, either used singly or in combination will be found to afford a sufficient range. From these colors used in couples at least sixteen pleasing combinations can be easily developed. It is to be noted that the color obtained by applying burnt umber over bronze green is quite distinct from the one which results from an application of green over umber.

The design may be painted upon the wood in water colors either before or after the application of the stain. If stain is applied first it should be allowed to dry for a day before applying water color. The stains used should be those ground in oil and thinned with equal parts boiled oil and turpentine. After a model has been painted and stained it should be finished with a coat of wax thoroughly rubbed down. White wood is one of the best woods for use in work of this description.

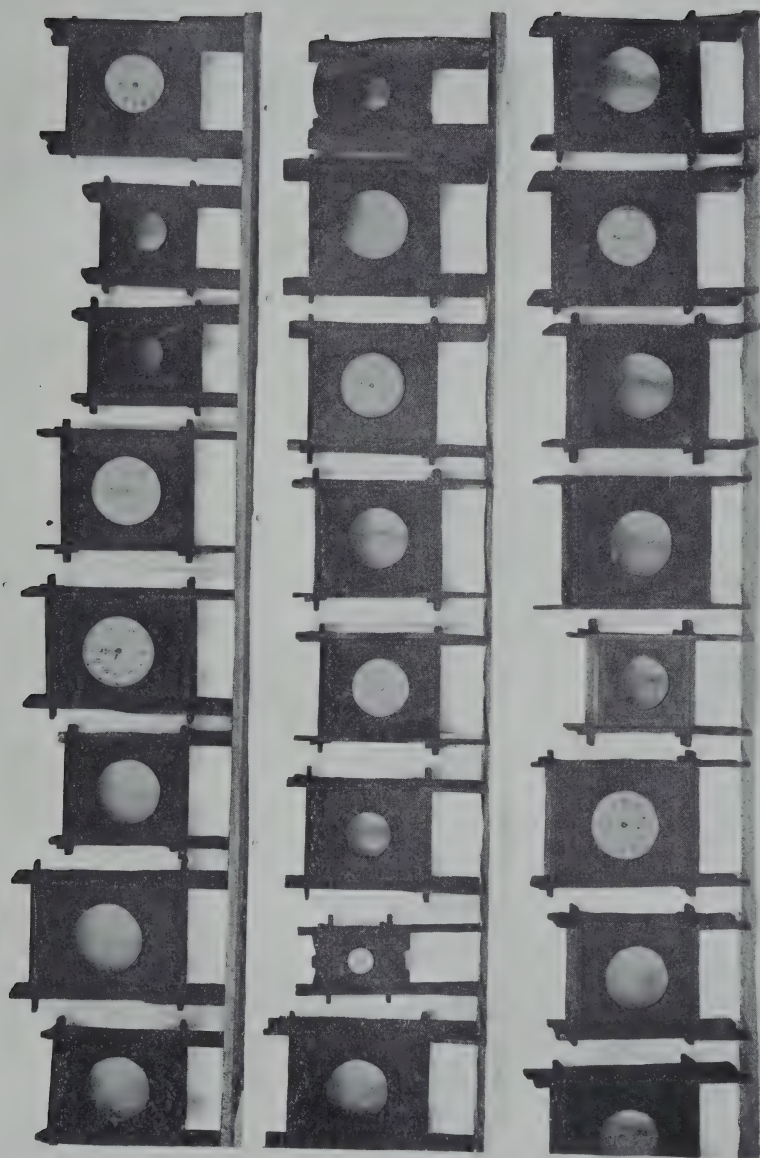


Plate 3. Class exercise, showing individual modifications.

There follows a list of models which may be devised to receive with propriety simple applied designs:

Key rack, wall cabinet, thermometer stand, letter rack, calendar back, jardiniere, match strike, pen tray, match box, blotter holder, pipe rack, ink stand, whisk broom holder, paper and envelope holder, wine glass holder, book rack, bracket, paper knife, brush and comb rack, standing book shelves, wall pocket, card case, plate rack, pen rack, cup and saucer rack, watch holder, hanging book shelf, pin cushion base, boxes (various types).



Working Drawing In Elementary Schools

WALTER MARTIN MOHR

M ECHANICAL drawing was originally introduced in the elementary schools because of its special value as a means of giving technical skill in drafting and of acquainting the child with plan drawings. Like all the arts it developed as a specialty. It was taught for its own sake, the aim being to secure beautiful and finished drawings. Manual dexterity rather than mental ability appeared as the end. It was unrelated to other school work, and the completed drawing served no purpose. The subject was not a live and useful one. Its immediate value in actual constructive work was not realized because constructive work in the schools had not developed. Its teaching was formal, at times little more than mere dictation or copying. Its problems were abstract and foreign to the child's world.

The teaching of constructive work has of late years markedly developed in the schools, due in part to efforts made to meet demands caused by the advance of the age along mechanical lines and in part to increased recognition of the great developmental power of the arts. As a consequence working drawing has come to occupy a more important place in the school curriculum. It is now seen as a necessary preliminary to the making of all advanced constructed forms. It fulfils a function as an artisan language. Properly taught it is a live subject, dealing with things within the circle of the pupil's interests, with things which he himself can intelligently plan.

PRINCIPLES UNDERLYING THE WORK

The teaching of working drawing should give some skill in the technique of mechanical drafting while at the same time it offers opportunity for developmental training.

1. It should familiarize the child with plans, the reasons for their making and the manner of reading them. It should give him a knowledge of their use in construction.

2. It should give ability to make a working drawing, i. e., to represent objects in plan and elevation, and should familiarize the pupil with the use of the drawing board and drafting instruments.

3. It should develop carefulness and accuracy in planning, dexterity in the manipulation of tools and neatness in execution.

4. It should develop ability to analyze, to see in an object those parts which must be drawn to express its construction, and ability to synthesize, to mentally assemble and image the whole when the various views are presented.

5. It should develop imagination and originality through the planning of new forms and the study of constructive design.

6. Above all it should cause the child to turn naturally to working drawing as a form of expression, a technical shorthand, giving information not to be otherwise conveyed save in elaborate and involved explanation.

THE COURSE OF STUDY: Working Drawing is a proper study for children in the last two years of the elementary school. It is assumed that such children will be from thirteen to fourteen years of age. Younger pupils cannot satisfactorily grasp the significance of this form of drawing as preliminary to the constructed object. In the earlier grades "development drawing"* is more easily understood. The time allotted to the work should be sufficient to give the child a usable knowledge of plan drawing. This means at least fifty periods of from fifty to sixty minutes each during the two years referred to.

In the high school the pupil studies the principles of working drawing through models the construction of which he cannot undertake, but in the elementary school the full value of the work cannot be secured unless the drawings are made of use. For young children construction should always follow planning.† The work then

* Drawing done preliminary to the folding of constructed forms in paper.

† See "Constructive Drawing," by Henry Turner Bailey, *The School Arts Book*, Nov. 1903.

is real and vital, not theoretic and formal. Where this cannot be carried out it is better to substitute some other form of mechanical drawing, as geometric problems or the projection of geometric solids.* In treating the details of practice we must consider the models to be drawn, the nature of the drawings and the methods of presentation.

MODELS TO BE DRAWN. As has already been noted, the models should be selected from among the forms the children are to construct. They should also be models of interest to the child. The desire for a logical sequence of technical steps should not lead to the introduction of objects outside of the child's world. For this reason machine parts, gear wheels and similar forms should not be used. It should be possible to focus the attention on the drawing and its use; complex models are therefore to be avoided. For a similar reason models with intricate curves or forms requiring sections should not be offered.

NATURE OF THE DRAWINGS. The drawings should be simple in character. They should not be elaborated at the expense of clearness of statement. In the earlier drawings two views will suffice and it is seldom necessary to represent all hidden edges. The drawings should be made in the third angle. The great advantage of using this angle is that it represents the different views grouped in their natural positions—the top view at the top, the right hand view the right, etc. In other angles the views are not as easily interpreted and it is more difficult for the pupil mentally to reconstruct the form.

METHODS OF PRESENTATION

In the early lessons, to familiarize the child with the nature of working drawings he should be led to compare some drawings of this description with other drawings which he has already made, that is, with object and development drawings. From such comparison he should be made to understand that a working drawing states exactly the size, shape and position of an object.

* For geometric problems and the projection of geometric solids, see "Vere Foster's Geometry," Blackie and Son, London; also, "Elements of Mechanical Drawing" by Gardner C. Anthony: D. C. Heath and Co., Boston.

WORKING SKETCHES. In practice the most satisfactory approach to the subject is through the working sketch. This sketch is similar to the working drawing in every respect, but is made freehand. It may be quickly drawn and offers a valuable method of familiarizing the child with the proper placing and relation of views, one to another. Two objects may be studied in one lesson and their views compared. Such sketches also furnish good material for practice in the reading of drawings; by questioning the pupil the instructor can easily ascertain whether the child understands the dimensions which each view gives.

Every sketch need not be developed as a working drawing but a working sketch should always be made as a preliminary to a mechanical drawing. In this way attention is concentrated on the steps of the lesson, on the correct appearance and position of the views and the proper placing of the dimension lines. When the sketch is finished the pupil's energy may be focused upon the making of an accurate mechanical drawing.*

All drawings, it has been said, should be made in the third angle but it is not necessary to teach the third angle as such. It is much too abstract a subject for elementary school pupils to grasp. A practical demonstration of the relative position of the views may be made by means of four pieces of glass hinged as in Fig. 1.† These may be fastened with plaster or tire tape in such a way that it is possible to revolve them into one plane as in Fig. 2. The model should be placed in the angle with its main faces parallel to the glass. The pupil may then be allowed to outline upon each pane with grease crayon or chalk the form as it is seen when looked at directly through the glass. If the horizontal pane be now revolved upward and the sides outward, the working drawing will appear with all its views in one plane. Lines connecting the various projections may be drawn to show the relation of the views to one another and to indicate their proper placing on paper. (Fig. 2.)

* A chapter on the practical value of freehand sketches will be found in "Mechanical Drawing; Progressive Exercises and Practical Hints," by Charles W. MacCord; John Wiley and Sons, New York.

†Plate 1.

After this each child may make his own sketch. The object may be measured by one of the pupils and its dimensions placed upon the blackboard. The principal view should be drawn first and the others derived by the use of extension lines. Dimension lines and figures should be carefully placed and the drawing properly lettered.

WORKING DRAWINGS. The working drawing should be made directly from the pupil's own freehand sketch. This sketch should contain all necessary information so that no further reference to the model need be made. During the early lessons the drawings may be made without the use of board and T-square. Rule, pencil and compass will be sufficient. The first aim, as has been noted, should be to familiarize the child with the technical language of this work, that is, with the placing, relation and reading of the views. Later the use of the board and square should be taught. The child, understanding the purpose of his drawing, is now prepared to place emphasis upon the accuracy of its execution.

In the elementary grades it will be sufficient to have all drawings finished in pencil. The inking of a drawing is a purely mechanical process which requires great care and good instruments. The elementary school pupil has neither the time for this, nor as a rule, the proper instruments. The inking of drawings is therefore best left to the high school.

INSTRUMENTS. To demonstrate the use of the drawing board, square and triangles the instructor will find it of advantage to have a large board hung before the class. The square for this board should be suspended by means of counterweights fastened to it by strings passing over the top of the board, Fig. 3. To assist in the demonstration large triangles should be used which may be cut from cardboard. The constant sight of the square and triangle suspended thus will serve to remind the pupils that they are always to hold the head of the square against the left edge of the board, and that all vertical lines are to be ruled with the triangle.

Those drawing kits upon the market which consist of a board with square and triangles attached, are useful because they furnish a ready

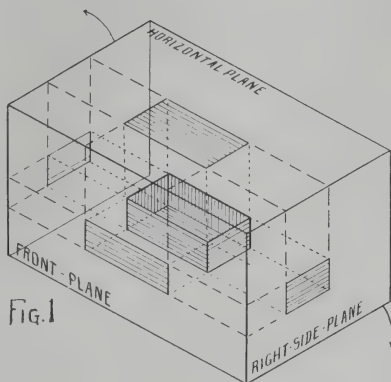


Fig. 1

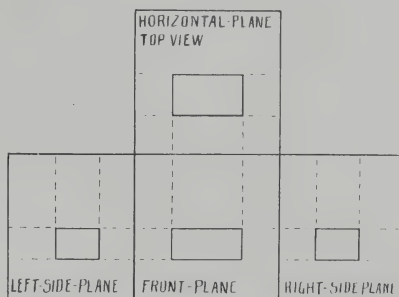


Fig. 2

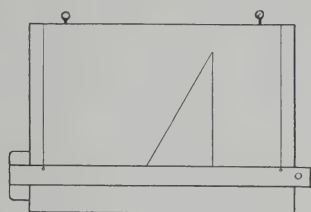


Fig. 3

CONVENTION LINES

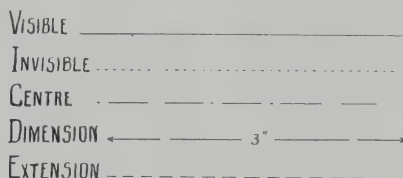
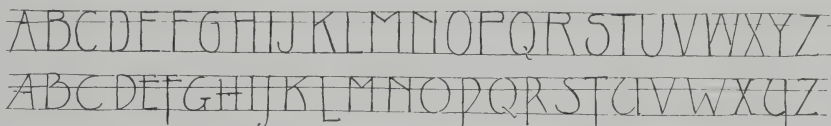


Fig. 4



1234567890 $\frac{1}{2}$ - 1234567890 $\frac{1}{3}$ DETAIL of BOOK CASE
Plain and Ornamental Styles Lettering without Small Letters

TOYEL RACK

SCALE $\frac{1}{2}$

J SMITH - 7YR.

Title Plain Letters

Fig. 6a.

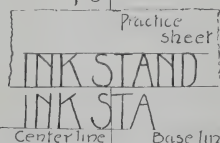


Fig. 7

FILING CASE

SCALE $\frac{3}{4}$

PAUL FIELD

Title Ornamental Letters

Fig. 6b.

means of keeping the tools. The 10 x 12½ inch size is preferable where large classes must be handled in crowded classrooms. The triangles furnished with this board are unfortunately too small for satisfactory use.*

In the first lesson upon the drawing board the class should be taught the proper fastening of the paper upon it. Two thumbtacks will be sufficient for this. If placed at the upper edge they do not interfere with the movement of the square. When collected the boards should be placed face to face to prevent dust gathering upon the drawings.

SIZE OF DRAWINGS. The earlier drawings should be made the full size of the object. Later a simple scale such as one half or one fourth may be used. The scale employed will frequently depend on the size of the drawing paper but care should be taken that the resultant measurements are not too small. It is well to have each child construct his own scale. This may be laid out on the edge of a piece of stiff paper or on a strip of wood.† The scale employed should be indicated on every drawing.

CONVENTION LINES. A definite system of convention lines should be used throughout the school. The following is simple and convenient and is in general use.

Visible edge —a full line

Invisible edge —a very short dash line

Centre line —a dot and dash line

Dimension line—a long dash line

Extension line, (used to connect views or to locate dimension lines)— a short dash line. See Fig. 4.

The necessity of distinguishing the different convention lines should be emphasized. In the early lessons only extension and dimension

* An excellent description of instruments, materials and fundamental operations will be found in "Drafting Instruments and Operations" by S. E. Warren; John Wiley and Sons, New York.

A good but briefer description appears in "Mechanical Drawing" by Anson K. Cross; Ginn and Co., Boston.

† This method of teaching the use of scales is described in "Constructive Drawing" by Henry T. Bailey; The School Arts Book, November, 1903.

lines need be used. Centre lines should be employed in bisymmetrical forms. The correct placing of dimension lines is important. They should always be near the elements dimensioned.

RULES FOR DIMENSIONING. The proper dimensioning of a working drawing is as necessary as is the making of an accurate outline. One states true proportion, the other accurate size. Actual dimensions are always given. The scale employed in making the drawing is for the purposes of the draftsman only; the workman is guided solely by the dimensions. A knowledge of the method of constructing the object is a great aid in placing the proper dimensions. All the measurements required by the workman must be inserted. As a rule it is necessary to state a dimension on one view only. The length, breadth and thickness of each part should be shown but repeated dimensions serve merely to confuse the drawing. Overall dimensions are required. Partial dimensions are not always necessary; their introduction depends upon the nature of the construction.

The figures showing dimensions should be carefully and legibly made. Those showing horizontal dimensions are placed so as to read from the left edge of the drawing. Vertical dimensions should read from the bottom upward. Division lines of fractions should have the same direction as dimension lines. Figures should be placed close to the line or space they explain and should be in the middle of the dimension line. They are never to be placed on the outline of the drawing or on centre lines.

Dimension lines are made of long dashes broken for the insertion of the figures referred to above. They should terminate in small arrow-heads pointing outward from the figures. These terminal arrow-heads should be placed exactly where the dimension begins and ends, for they show definite size and not merely direction. When dimensioning small circles, a diameter may be employed as a dimension line; in large circles a radius may be used. In the latter case a small ring surrounding the centre of the circle replaces one of the terminal arrow-heads. Vertical or horizontal diameters or radii are not used for dimensioning as it is possible to confuse them with centre lines.

LETTERING. The appearance of the most carefully executed drawing is spoiled by poor lettering. As this is the last part of a drawing to be made it is often done in a hasty and careless manner. All lettering should be printed; no script should appear on a working drawing. A simple letter should be used, one that can be drawn freehand easily and rapidly.* (Plate 1, Fig. 5.) Practice should be given on the alphabet and on figures, also on complete words, as the pupil's name, grade and school. Careful attention to the spacing between the letters of a word and between words themselves is one of the secrets of good lettering. Although no definite rule can be given, about one-third the width of a letter should be left between letters and at least the space of one letter between words.

The title of the object drawn, the scale employed and the name and grade of the pupil should be placed on the drawing. (Fig. 6, a and b.) In two view drawings the lettering may be below the drawing in the centre of the paper. In three view drawings it should be in the upper right-hand quarter of the sheet. It will aid in securing correct spacing and placing if the pupil letters the various parts of the title along the lower edge of a slip of paper and then places this as a copy directly above the line upon which the title is to be drawn. (Fig. 7.) In elementary schools it will be found better, as a rule, to have all titles lettered in capitals. Variety is to be secured by varying the heights of the letters in different lines.

DEVELOPMENT OF A COURSE

It will help us to determine the proper progress of a course if we distinguish its steps and emphasize the aim in each.

In work which is to extend over two years many sketches should be made in the first year that the relation, placing and reading of the views may become thoroughly familiar to the child. The models chosen should be such as require but two views. The earliest

* The following books contain directions for lettering and give various styles of alphabets:

"Lettering of Working Drawings" by J. C. L. Fish; D. Van Nostrand and Co., New York.

"Lettering for Draftsmen, Engineers and Students; a practical system of freehand lettering for working drawings" by Charles W. Reinhardt; D. Van Nostrand and Co., New York. "A Text-book of Free-hand Lettering" by Frank T. Daniels; D. C. Heath, Boston.

drawings should be of objects which require an outline only, with extension and dimension lines. Objects which show edges within the outline may next be drawn and later hidden edges may be represented. The drawing board should not be introduced until the child is familiar with the working sketch, that is, until the second half of the first year.

In the second year three-view drawings should be made and greater stress should be placed upon technique. Accurate drawing should be insisted upon. The child should also be taught to plan the arrangement of his drawing upon the sheet, to use marginal lines and to letter titles.

ORIGINAL WORK. The opportunity for the development of original work in a course of this kind is not to be ignored. Such work may be begun early by the variation of individual exercises, each pupil within limitations being allowed to determine his own proportions. The latter must be governed by the use to which the model is to be put. It is possible also to secure individual variations of the outlines of a given model. Detail drawings will then become necessary for use in construction. One method of developing this plan is indicated below. (See Plate 2.)

1. A blank or type model of the object to be drawn, (i. e., one having no modified outline) is shown to the class. Each child makes a careful working sketch of this form.

2. A lesson is next devoted to determining appropriate individual proportions. As stated, these will be governed by the use to be made of the completed exercise. After these dimensions have been settled upon they should be placed on the working sketch already made.

3. If any portion of the model is to be changed in outline such modification must be worked out in a full size detail drawing. As a preliminary to this it will be well to have each pupil make upon a practice sheet several possible variations. Satisfactory results will be promoted by showing good examples of modified forms. After the pupil has made various modifications the best are to be selected for use.

4. Finally, a working drawing carefully executed to scale is to be made from the sketches.

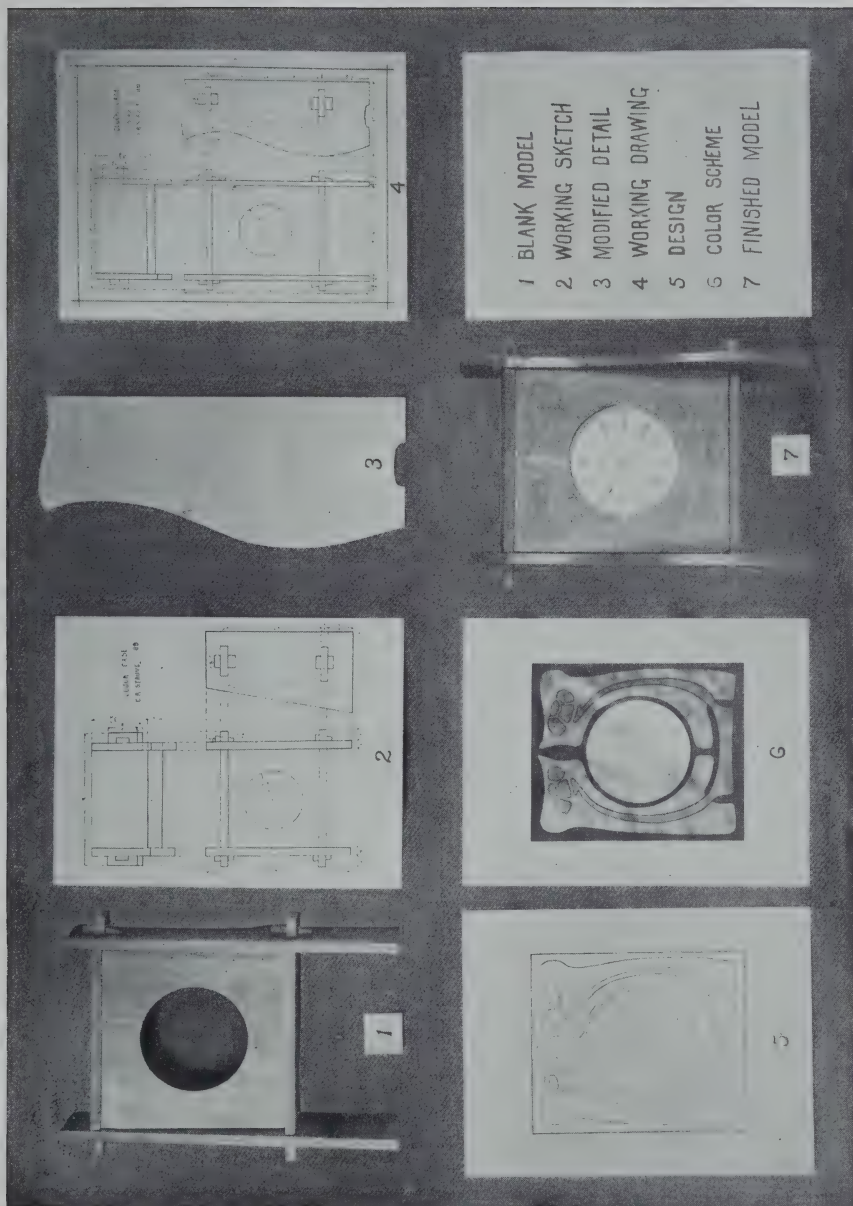


Plate 2.

STANDARDS OF CRITICISM. In criticising working drawings made by pupils in elementary schools it must be borne in mind that the drawings themselves show only the technical side of the work. They should of course be clean, neat and accurate; the views shown should be in their proper positions, convention lines should be correctly employed and all dimensions should be plainly indicated. As a direction to the artisan the drawing must state all information necessary to the making of the form.

But beyond the technical skill displayed in the drawings there should be on the part of the pupils who have made them, a real understanding of their purpose. These pupils should be able to respond directly to questions touching all steps which they have taken. They should be able to explain the relation and placing of the views and to interpret all the dimensions given. They should be able to make a working sketch of any simple constructed form with which they are acquainted, and should also be able to read simple sketches of similar forms. They should in a word, be possessed of very practical knowledge, for surely the subject is a very practical subject.

Besides those books mentioned in the text the following will be found helpful:

For work in geometrical problems and projection drawing: "A Course in Mechanical Drawing for Evening Schools and Self-Instruction" by Louis Rouillion; Prang Educational Co., New York.

"Notes for Mechanical Drawing; arranged for High Schools and Evening Schools" by Frank E. Mathewson; Taylor-Holden Co., Springfield, Mass.

"Working Drawings; How to make and use them" by L. M. Haupt; J. M. Stoddard and Co., Philadelphia.

More extended works covering the entire field of mechanical drawing, giving the use of instruments, the principles of projection drawing, methods of lettering, etc.:

"Industrial Drawing" by Dennis H. Mahan; John Wiley and Son, New York.

"Theoretical and Practical Graphics" by Frederick N. Willson; published by the author.

Furniture for the High School Drawing Room.

HAROLD HAVEN BROWN.

THE subject of furniture for the High School Drawing Room seems to divide itself, like all Gaul in our old Cæsars, into three parts. These we may classify as Seats, Tables and Closets. Allow me to lead you to the first, immediately.

One's natural choice of a convenient and comfortable seat for a student would be a strong, well shaped chair with a back. Common humanity would seem to dictate the presence of the back, although it is by no means common to find them in Parisian ateliers. The shape of this chair is not of special moment provided it is free from ornament and built for service. Strength and durability would be more surely obtained in a chair with a wood or leather seat in preference to cane or rush.

The problem changes, however, when one has to provide for large, closely packed classes of city boys to whom the profession of baggage-smasher has not ceased as yet to be an ideal, and whose attitude, at once elephantine and calf-like cause the common chair soon to weaken and retire from active life. The recourse in such an event is to adopt stools or benches without backs. The advantage of a seat without a back is twofold. In the first place it has one less feature to become broken or loose, and secondly—and this is by no means a trivial item, a boy cannot tilt a backless seat on its hind legs.

Another point in the problem of seating the strenuous is the painfully noisy contact of the naked chair feet with the floor. Where permanent positions are possible the seats should be fastened to the floor. The alternative is to have rubber tips to the stool-legs, these to be fastened on and not merely slipped over the ends, that he who scruples not, may be denied a handy rubber projectile for school-room

use. Whirling seats, adjustable in height are an abomination. If varied heights are demanded, provide two or three sets of seats, each a different fixed height from the floor.

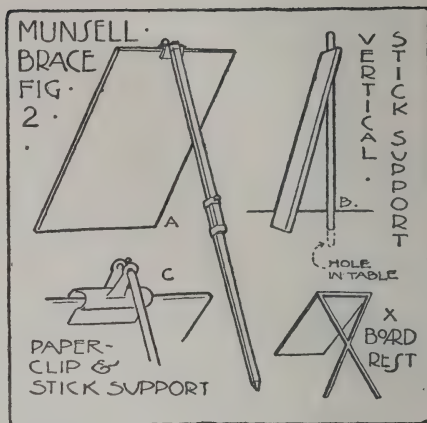
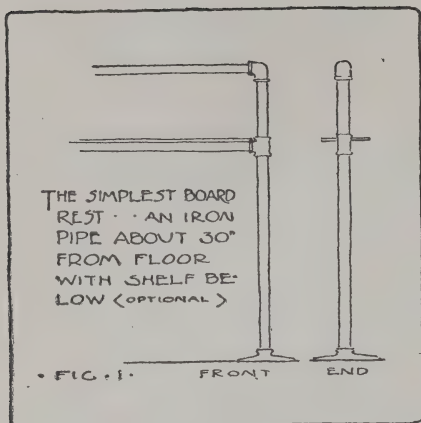
Under the heading, "Tables," I would include everything used in the nature of support, excepting seats. This naturally covers any sub-orders of the families of easels, shelves, racks and stands.

The drawing table seems to elbow the others aside for first consideration as a natural mate to the seat. The rule established above that quiet and discipline are forwarded by having as little left to the adjustment of the pupil as possible is equally applicable here. In a room of adult pupils whose serious ends have o'ershadowed their youthful initiative, tables adjustable in height and slant are good, but I much doubt their necessity in the average high school drawing room, while the freedom from constant individual efforts at slight changes to suit student whims is relief indeed to an instructor. So then, if your student body is full blooded with active extremities, screw your tables to the floor. Many years must pass before the recollection will fade from my mind of collapse of an unfastened Cleaves drawing table, well loaded with water colors, utensils and flowers.

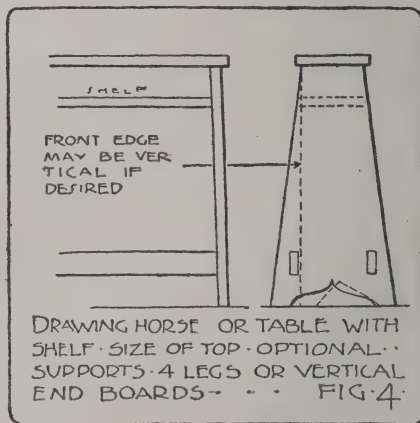
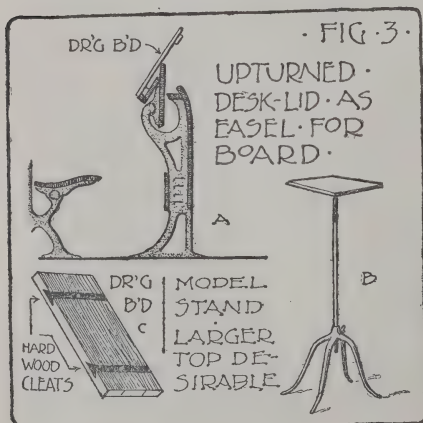
In close quarters the simplest support for a drawing board is a horizontal iron rod or pipe fixed a comfortable height in front of the row of seats. (Fig. 1.) The lower edge of the board rests on the knees. A shelf may be added below to hold utensils or books if desired. A long bench might be used with this instead of stools. Another expedient in crowded rooms or for individual use where a table cannot be had, is the stick support. (Fig. 2.) The upper end of the board rests on a rod, the knees supporting the other edge. A paper clip or spring clothes pin may be used with the rod to prevent slipping. (Fig. 2 C.) This scheme has been elaborated into a device patented by Mr. Albert Munsell of the Mass. Normal Art School, known as the Munsell portfolio brace. (Fig. 2 A.)

Among tables the simplest to procure and one capable of excellent use is the ordinary school desk. One objection to it is its lack of appeal to the teacher who desires tasteful surroundings different

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from other school rooms. These desks frequently are already installed in rooms allotted to drawing and if of the form illustrated, may be used as very satisfactory easels. (Fig. 3 A.) In some schools each desk is used to contain the drawing materials of all the occupants of that particular seat. These desks with their accompanying seats all screwed firmly to the floor reduce noise and movement to a minimum. The flat table, with a top varying from a narrow strip to a fair sized rectangle, is excellent. (Fig. 4.) With the narrow top in use the board must partly rest on the knees. For the flat table a wooden block can be used under the upper end of the



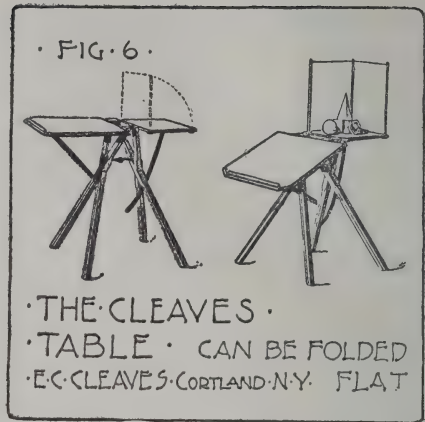
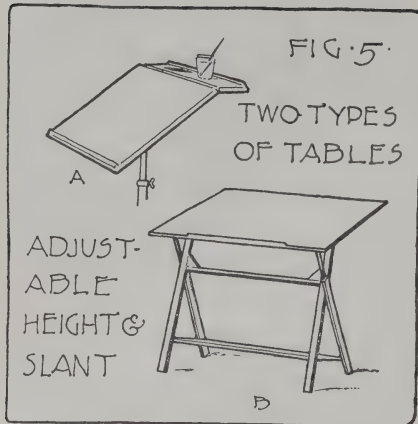
board when a slant is desired, or should a vertical position be necessary, supports in the form of movable sticks set in holes are easily arranged for. (Fig. 2 B.) These tables (Fig. 4) may have four legs or shaped vertical end boards for supports, braced as may be necessary. The spread of the feet must be enough to prevent any possible overturning by pressure on the board while drawing. A brass ring in which a water color bowl can rest may be pivoted beneath the edge of the table and swung out of the way when necessary.

For adjustable tables one of the best is probably that shown in Fig. 5 A. The variety of slants possible in this table, together with its adjustments for heights, and the ever level instrument shelf make it exceedingly convenient. In a class-room, however, especially where the active and inquisitive boy is present, it would be best to replace the height adjusting screws with bolts, duly tightened with a wrench, groups of tables being arranged at different convenient heights, thus avoiding individual tampering with the levels. The slanting adjustment may be left optional.

Other tables are on the market with X shaped supports, jointed at their crossing places and adjustable in height and slant by spreading or closing the feet. (Fig. 5 B.) These tables, however, are much better adapted to professional schools or ateliers than the class room. The Cleaves table (Fig. 5) has many good features, notably the adjustable model shelf in front. The three legged easel, of lineage ancient and honorable, must be accorded a place here, though the ordinary school we have in mind has little use for it. In night schools it has been a great convenience, however, its three legs straddling the children's desks on which the art students found a sitting.

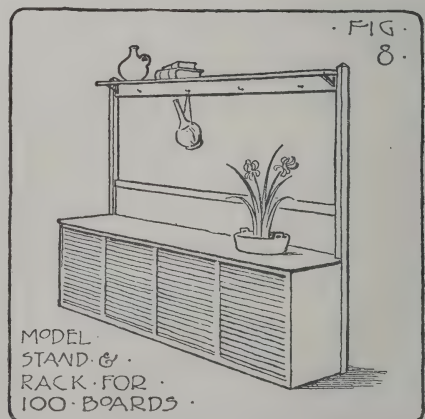
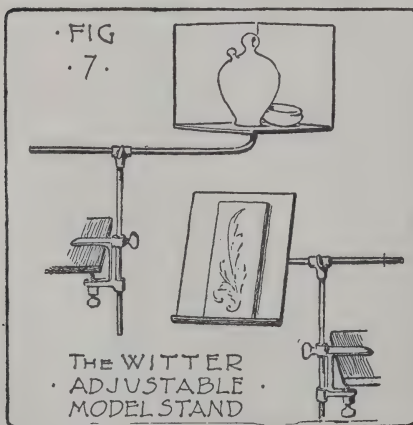
The stand for models is less of a problem than that of the drawing table. So long as it supports the desired models in the right position and furnishes arrangements for background it would seem that its purpose was fulfilled (Fig. 9.) The portable, iron footed stands with vertical centre rod (Fig. 3 B) are well known; but I have never seen one with a top large enough to accomodate a fair

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sized group. Only by using a drawing board over the actual top is a satisfactory area obtained. A device known as the Witter model stand, (Fig. 7,) may be fastened to desk or table edge and has several convenient adjustments. Shelves always may be used as model stands and in crowded rooms can be folded against the wall when not in use.

The problem of storage is a vital one, especially as in a school which attempts to provide a board for every pupil. The question of their protection at once arises. Two positions of the boards, vertical and horizontal are possible and each has its defenders. The vertical



position, it is claimed, avoids the collection of dust. On the other hand it is never possible to put loose papers away with a vertical drawing as one frequently can do by laying them on top of a horizontal board.

The built-in board rack forming a part of the wall can be made a most decorative as well as convenient object and may be advantageously combined with glass doored cabinets above. The board rack made on the principal of the sectional bookcase, each rack holding a group of boards has been found to possess many advantages. These racks may be placed at convenient stations about a room, their tops forming excellent model stands. They may be grouped as needs dictate making a rack as high or long as one desires. Each unit is comparatively light and portable. Twenty-five or thirty boards is enough to each unit.

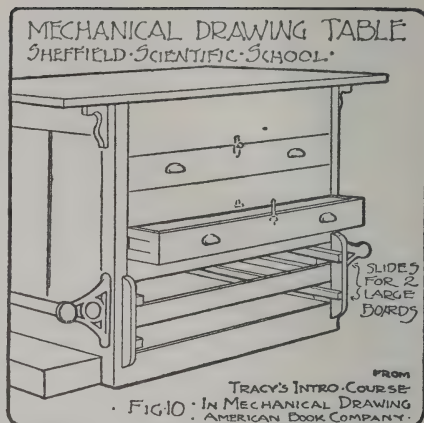
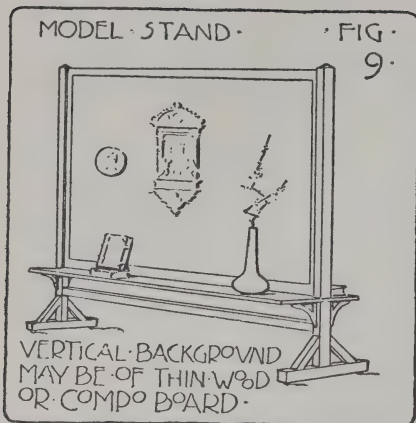
A development of this idea, shown in Fig. 8, is in satisfactory use in the N. Y. High School of Commerce. The vertical uprights support a board for a background, and, some distance above, a rail for suspended objects and a higher shelf. The background piece was kept low to allow the teacher uninterrupted view of the room.

The problem of dust, before mentioned, and the dangers ever threatening exposed work, makes some sort of cover for the front of a board rack almost a necessity. By far the most compact and slightly arrangement is the rolling shutter made of thin wood strips fastened on a strong but pliable backing. The constructive principle is the same as that of the roll-top desk.

A combination of board-rack, material closet and mechanical drawing desk has many modifications, and in one form or another has a wide use. The storage of boards and materials is so arranged that each student using the desk has his board and paraphernalia directly at hand. It may be arranged even so that each student has a different key.

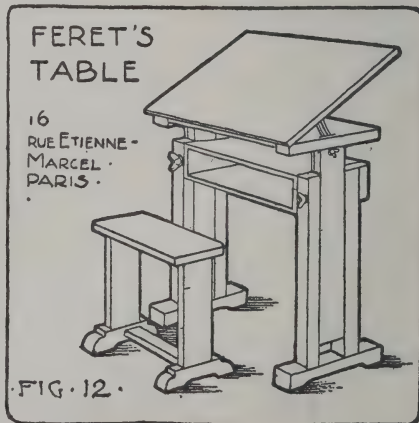
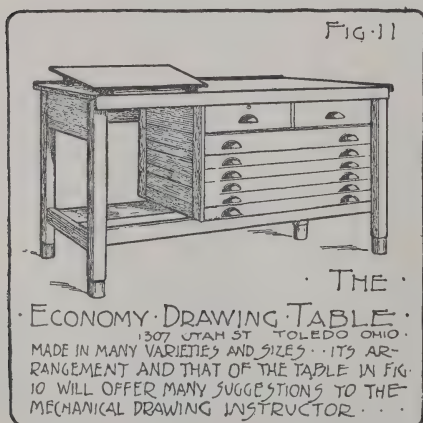
Exhibition frames are also a necessity in a well equipped drawing room. Their backs may be either hinged or entirely removable. These backs should be of soft wood to permit the use of thumb tacks, and far enough from the glass to allow the display of cards thick or

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thin. A few frames would be decidedly valuable if so made as to permit the placing of an open book between back and glass for the display of valuable illustrations that otherwise could not be shown.

Drawing boards, may be spoken of here, though coming more appropriately perhaps under the heading of drawing materials. Boards having cleats on the back, while strong are exceedingly cumbersome. The alternative of having end cleats fitted with tongue and grove joint is not always satisfactory. When such boards are made of badly seasoned wood they are very apt in time to split lengthwise from cleat to cleat. The board shown in Fig. 3 c was the result



of a third experiment and after a year's use has proved satisfactory. It is of pine is smooth on both sides and does not crack. The cleats are of hard wood, driven in but not glued. The screw in the centre of each cleat prevents any possible slipping yet allows expansion and contraction. Whether or not such a board would be approved by a mechanical draughtsman I do not know, but for all freehand work it has been a distinct improvement over all others.

Appropriate fittings it is to be noted are an aid, but not an indispensable aid to good work. If we would see the equipments of many school drawing rooms where excellent work is now being done we doubtless would be surprised at the lack of what some teachers consider quite necessary fittings. Could one look back into the art schools of a century past it is to be believed that few well-equipped rooms would appear. It is possibly true that a good workman never complains of his tools, yet it is to be added that good tools are a wonderful aid to good work. The better and more complete the fittings of the school drawing room the less worry and more pleasure will there be for both teacher and pupil and the greater the stimulus and enthusiasm for skillful artistry.

A LIST OF FIRMS WHOSE CIRCULARS OR CATALOGS WOULD PROVE USEFUL IN FURNISHING A SCHOOL DRAWING ROOM.

American School Furniture Co.	19-23 W. 18th St. N. Y., N. Y.
J. & G. Alexander Mfg. Co.,	30 Court St., Grand Rapids, Mich.
A. L. Bemis,	180 Union St., Worcester, Mass.
A. V. Benoit,	10 W. 33d St., N. Y., N. Y.
Chandler & Barber,	122 Summer St., Boston, Mass.
E. C. Cleaves,	Cortland, N. Y.
Devoe & Reynolds Co.,	Fulton & Williams Sts., N. Y., N. Y.
Economy Drawing Table Co.,	1303 Utah St., Toledo, O.
F. W. Emerson Mfg. Co.,	23 Mortimer St., Rochester, N. Y.
Frost & Adams,	37 Cornhill, Boston, Mass.
Hammacher Schlemmer Co.,	209 Bowery, N. Y., N. Y.
Keuffel & Esser,	127 Fulton St., N. Y., N. Y.
R. E. Kidder,	27 Hermon St., Worcester, Mass.

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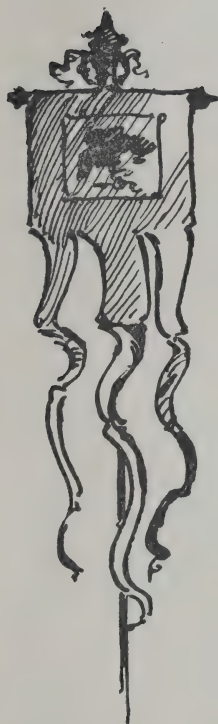
Kolesch & Co.,
Laughlin Hough Co.,
Milton Bradley Co.,
Queen & Co.,
J. & G. Rich,
E. G. Soltmann,
Wadsworth & Howland,
Washburn Shops,

138 Fulton St., N. Y., N. Y.
134 W. 14th St., N. Y., N. Y.
Springfield, Mass.
5th Ave., N. Y., N. Y.
120 N. 6th St., Philadelphia, Pa.
119 Fulton St., N. Y., N. Y.
82-84 Washington St., Boston, Mass.
Polytechnic Institute, Worcester, Mass.



Art and School Festivals

JAMES HALL



THE recognition of certain festival days is a well established school custom. Often a teacher brings into the Thanksgiving or Christmas celebration much of the season's spirit; or something of impressiveness is found in the commemoration of Washington's birthday, or in the Memorial Day exercises. As a rule, however, too little of artistic significance finds its way into the school festival.

The importance of the festival in the development and humanizing of the race, and hence its potential power as a factor in the education of the child is only beginning to be recognized.

Mr. Percival Chubb says:* "It is in the endeavor to lay hold upon the child as an artistic and literary personage by repeating in his education the leading phases in the aesthetic and literary development of man that the festival will receive its due recognition, and play the very important part which it is fitted to play in stimulating the historic imagination, the human sympathies and the spontaneous creative energies of the child."

In the same article it is pointed out that the festival of the past was an opportunity for bringing together the artist and craftsman, the actor and singer in a co-operative effort to produce an artistic unity of effect, and that "By following this clue, we obtain a very

* "The Function of the Festival in School Life. The Elementary School Teacher, April, 1904."

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genuine and natural correlation of school subjects and activities in the place of the very forced and artificial correlation which is often sought after in our schools." The recognition of the school festival as a vitalizing centre around which to group some part of the work in history, English, physical culture and the arts and crafts, is rich with possibility. It is with some of the opportunities offered by the school festival to the art teacher that this paper chiefly deals.

To understand these possibilities a brief consideration of the festival of history is necessary. "It is indeed," says G. B. Brown, "hardly too much to say that it is to the festival, family, communal, and tribal, that almost all the forms of art known to ancient and mediaeval times owe their origin, or at least development." It is not only that the artist found in the festival opportunities to express himself, but the whole atmosphere of the occasion was such as to call forth his creative efforts in manifold forms of decorative and symbolic art.

The festival originated among the early agricultural peoples. It grew up as a necessary stimulus in the tedious round of labor necessary from seed time to harvest. It came as a religious ceremony accompanying the important steps of the work, and by its art idealized the labors of the field.* Among the Egyptians and the Greeks it is clearly evident that architecture came into being to provide permanent structures for the religious festivals, while the sculptors and painters contributed their art in significant decorations for the glorification of the deities whom the festivals invoked.

Christianity turned pagan fetes to its own account until in the days of the Renaissance the pageant and the mystery play arrived at a high point of artistic pomp. The very atmosphere of Florence was one of festival. Fetes and impressive ceremonies took place on all occasions and artists and craftsmen of all kinds were employed to carry out the ideas of priests and scholars.

Although the artists were greatly busied in festival work and the planning of pageants, the greatest stimulus to art came through the opportunity afforded to materialize and see in actual movement the

*See Katherine E. Dopp. The Place of Industries in Elementary Education.

pictures which afterwards in refined form appeared on the walls of churches and as altar pieces. Such subjects as the "Adoration of the Magi" or the "Annunciation" were actually presented in much the form that we see them painted by the Italian masters. The "ideal excitement" of the festival occasion aroused the artistic impulse and fanned it into flame. From these glimpses of the festival conditions of the past it will be seen what riches there are from which to draw and adapt to school purposes, what sources of inspiration are open to the art teacher.



Some of the practical advantages and opportunities for art instruction which the school festival offers are as follows :

1. The natural stimulus of an immediate need for significant design is offered. Every teacher knows how the pupils' interest and effort are augmented under such conditions.

2. In a scheme of room decoration or stage decoration, the unity of the whole must be given first thought. That the parts must be subordinate to the total effect is of prime importance, and is easily demonstrated. In teaching this lesson a step toward an enlightened view of municipal art matters including the holiday decoration of streets and public buildings may be taken by the young citizens under our instruction, if the problem is well presented.

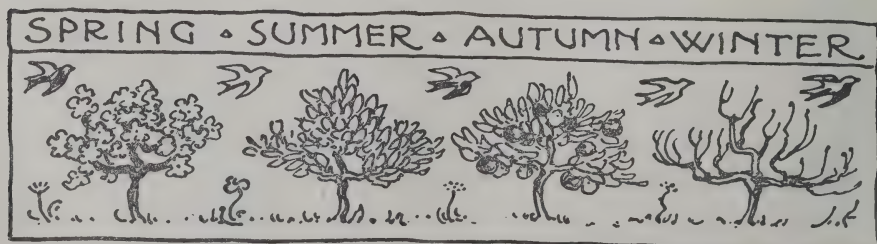
3. The size of the problem necessitates "team work," the individual class members doing as far as can be determined the work that each does best, or the work in which each takes most interest. Each must work according to well defined limitations to which all have agreed for the sake of the final result. The stronger pupils help the weaker by their example and by doing the more difficult parts of the work, where necessary. Those lacking in originality can be made useful in carrying out the ideas of others. It is thus that the decorative art of the past has grown up. Thousands of unoriginal but willing and moderately skillful workmen have made no other variations upon the well known motifs than the inevitable variations result-

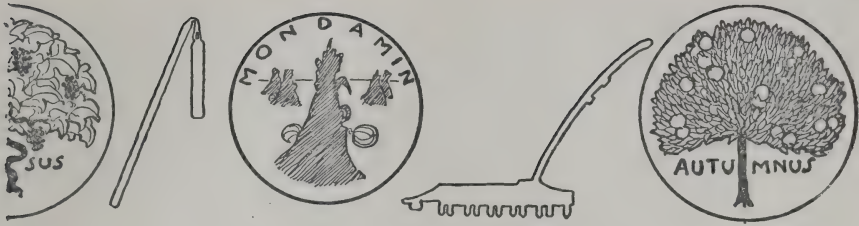


Fig. 1.

ing from intelligent craftsmanship. In our days the striving for originality among pupils often wastes much valuable time and energy that might be utilized in good straightforward workmanship leading to an appreciation of the larger principles of art expression. A community problem teaches many lessons impossible in individual problems.

4. The decorative problems of the festival bring us naturally face to face with the question of artistic symbolism. There is the symbolism and suggestive power of color, as well as the numerous accepted symbols of decorative art, the legacy from the past. The knowledge of, and understanding of these is necessary to a full appreciation of decorative art and yet it is a knowledge that is too seldom found, and which "pure design" does not teach. There are the symbols of the seasons, of the trades, of literature, of the arts, heraldic devices, the seals of cities, flags of countries, seals of colleges and universities, national flowers, and the common symbolism of the flowers and the trees. The artistic use of these does not mean mere copying although copying beautiful designs for a purpose is worth while. The adaptation necessary to fit a device for a given purpose gives opportunity for display of a high order of talent. This





is illustrated by the very artistic use of the great publishers' devices in medallion form on the Boston Public Library. Each is a work of art and all are in harmony with each other and with the building.

There is a natural symbolism of color which we need to use, colors for gaiety and for sadness, and colors characteristic of the seasons. The suggestive power of color may be taken advantage of in such a simple way as in the use of a background color in the hanging to suggest a place or a mood.

5. Although the suggestive power of symbolic decoration is generally to be preferred to attempting realistic scenery, simple attempts in scene painting may sometimes be found practicable, and here the question of landscape composition finds its excuse in a real school need. The use of a decoratively lettered statement of the scene supposed to be represented, (adopting a custom used in Shakespeare's time,) opens an opportunity for artistic lettering with a decorative and symbolic touch added, as, for example, a conventional tree for a forest or the wave lines for a river.

6. The temporary character of festival art makes finish unnecessary. Art has been defined as excellence of expression. If we may take this definition to mean not only the doing of a thing well, but doing it well enough for a given purpose, we may find something

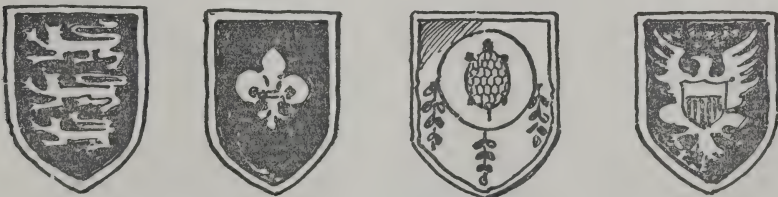


Fig. 3. Patriotic festival shields.

of comfort in the results of large work of the temporary character here demanded and as worked out by pupils. In much of the pupils' work, if we are conscientious, we must wonder how far we should accept from the older children work crude in character which might be improved by further expenditure of time, while on the other hand the lack of time at our disposal gives us pause.

A certain crudity of execution in large work of the character we are considering, not only is not a fault, but often add to its effectiveness. This must not, however, in any way be taken as an excuse for careless drawing but rather as meaning that the rapid and unfinished sketch will often serve as well or better than a drawing requiring more time.

7. The need of programs and posters in connection with festivals opens another large field for design on a smaller scale with its problem of fitness. This is important but has been much so more fully exploited than the matter of room, stage and costume decoration, that we may leave it with mention only.

SOME EXPERIMENTS, AND RESULTS.

A harvest festival stage decoration was worked out by an eighth grade. (See Fig. 1.) It was decided in discussion to typify the autumn deities and harvesting in general by simple symbols. The art teacher led the class to see the need of planning the scheme so that the parts could be worked out by different pupils, with view to a unity when finished. Everyone in the class made a sketch, then the best were chosen and the authors of the selected sketches worked out the large decorations. The size of each of the larger circles was twenty-six inches in diameter, of the smaller, twenty inches. The colors were applied flat and were carefully related to each other and to the stage background. The implements were cut out of cardboard. The costumes of the children were in autumn colors and a pagan altar painted by the teacher, placed in the center of the stage was piled high with fruit and vegetables while sheaves of wheat flanked the sides of the stage. The exercises included (1) the call to Harvest (pagan in character); (2) Old English Harvest Home celebration; (3) The spirit of the Harvest Home in America.

A Christmas frieze was worked out as a stage decoration by a small high school class (See fig. 2). The thought was suggested to the pupils, a processional of the ages, the festival of light of all times. Egyptians, Romans, Druids, the shepherds and the sages, mediæval and modern figures in characteristic scenes were to form the subject matter. The silhouette was adopted as being the simplest and most effective method in which to work. The general plan was suggested in a vague small sketch by the teacher. Each pupil then chose the subject that most appealed to him and two or three undertook the lettering. The sketches for each section of the frieze were first worked out one-third size. When these were whipped into shape, they were squared off and drawn up full size, thirty inches in height. A few of the pupils failed to carry out their sketches but the processional arrangement made it possible to omit these without serious detriment to the whole idea or effect.

A Patriotic Day festival program gave opportunity to a sixth grade to work out in large size shields bearing respectively the arms of France, England, and America, also an Indian shield. The decorative character of the fleur-de-lis and of the heraldic lion made good studies. Several pupils attempted each shield and the most successful were finally used as stage decorations, to indicate the scenes. (Fig. 3.)

A May Festival included the enacting by a high school class of the *Midsummer Nights' Dream*. Here an actual forest scene was painted. It so happened that in this instance the work was done by a special pupil of the school, a young man of experience in scene painting. Work of a similar though cruder character, however, could have been done by high school pupils.

Classic columns were painted at another time to suggest the palace scene of the *Merchant of Venice*. Decorative ingenuity was also used in preparing the caskets for this play.

In the High School of Commerce of New York at the time of the formal opening of the school, the large assembly hall was made significantly decorative by the use of the seals of the great cities of



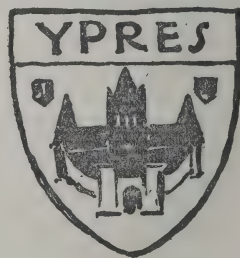
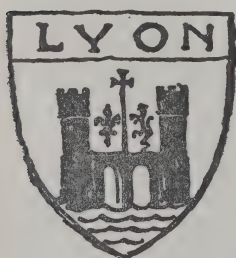
Fig. 2.

commerce of the past, spaced around the hall. Where the seal of the city could not be found the name alone was decoratively worked out. These exceedingly interesting decorations were entirely worked out by the boys of the school, in the drawing periods.

At the time of a city celebration one high school class in mechanical and architectural drawing lettered placards in simple decorative form to mark the notable and historic spots of the city while the freehand classes designed posters announcing the celebration. For the latter prizes were offered by the city committee of arrangements to the pupils producing the three best. While not a school festival, the festival spirit prevailed in this instance. The civic pride of the pupils was stimulated.



The practical experiments that have been noted are suggestive of a host of further possibilities in school festival art. In the publications of the E. L. Kellogg Co. are described many special pro-



Seals of cities.



grams for the different festival days of the year. Many of these programs are such that they invite the contributions of the art classes. For example, a New Year's entertainment calls first for an appropriately decorated stage. Then the characters taken by the children include, the old and the new years, the different months, the seasons, and a herald. Suggestions for costuming are given, as for example March, a boy, should be grey-pussy willow color, and should wear a few of last year's dried pussy willows. He should carry a basket of bright easter eggs; or May, a girl, should wear white, and a large straw hat covered with flowers. In her hand she should carry a small May pole.

How easy it would be to introduce the element of simple design as a border into these costumes of the months, or to work out in larger fashion some banner or shield for each to carry. This entertainment, it is true, is suggested for primary classes, but something similar for older children might be carried out or older classes could contribute their art work for the younger ones. The material for symbolic month and seasonal design includes besides trees, flowers



Seals of cities.

HALL

and fruits, the signs of the zodiac, the symbols of the holidays, etc. The color treatment in itself is a problem of great interest.

An October musical exercise introduces the children as the autumn leaves, the maple, oak, elm, and chestnut. Would not here be an opportunity for free spotting in surface design in the costumes, suggestive of the falling leaves? Or again the costume could be so designed that the color and edges would suggest the leaf.

Arbor Day exercises would call for the decorative interpretation of the trees. Lines from the poets could be worked out in decorative motto form here as at other times, for room decoration.

May Day and Flower Day are full of suggestion. If a procession were possible we might take hints from Walter Crane's beautiful designs personifying the flowers. The use of banners and pennants opens up a large field. Not only can the shapes and colors of the flags and streamers be much varied, but endless variety and meaning can be introduced into the decorative devices upon them.

Labor Day invites the use of the symbols of the trades, in the room decoration. Here again, were it possible, a most interesting industrial procession of the crafts might be worked up, with simple costuming, and with the historic emblems of the various crafts worked into the banner and pennant.

The Patriotic Days calling for the use of the flag give opportunity to teach reserve. The usual use of our flag oversteps the bounds of decoration. The reasonable and decorative habit of using the flag in moderation and with a consideration for unity of effect would be an excellent lesson in design. Other patriotic symbols like the eagle, the fasces, etc., might also be employed. There is an assembly hall in one school decorated with flags of all nations, decoratively spaced on the three sides of the room while over the platform a large United States flag holds the first place. It is intended to suggest that America is made up of all nations united by a common flag. Under the flag of each nation appears a cast or picture typifying the special contribution of that nation to the civilization of the world. This idea might be suggestive of a scheme for one of the Patriotic day decorations. The use of shields and seals (already

alluded to) has great possibilities. Each graduating class could design its own shield and these might become a part of an ordered scheme of decoration in the hall of the school. This touches the interesting study of heraldry and heraldic devices.

In looking up the various festivals, Chamber's Book of Days is valuable, Strutt's Sports and Pastimes of England and Brand's Popular Antiquities are mines of information. Meyer's Handbook of Ornament and Gerlach's Allegories and Emblems are invaluable sources from which to draw when searching for artistic symbols.

Historic ornament takes on a real significance when it is employed in connection with occasions demanding its use.



The Art Department of the Normal School

Its Consideration as One Factor in the Development of Teachers

ELIZABETH H. PERRY

THE assignment of a portion of the Year Book of the Council of Supervisors to a consideration of problems peculiar to the Art Department of the Normal School suggests that we seek a comprehensive grasp of the purposes of normal work, the considerations under which it is accomplished and the methods by which it is secured.

The forms in which these purposes, conditions and methods are expressed by different normal schools are various, but when we seek the spirit of the form, we find a unity of purpose throughout the country.

Under the title "Design of the Normal School" a leading principal* writes:—

"The first requisite in the discharge of its function is that the normal school shall inspire the student with the spirit of the true teacher.

It is vitally important to awaken in the normal student a just appreciation of the work of the teacher: the feeling that he must have the spirit of service, must love his work and love his pupils; that he has a mission which he must accomplish, and come to his pupils, as the Great Teacher comes to men, that they may have life abundantly.

The second requisite is that the normal student shall be carefully led through the educational study of the subjects of the public school curriculum. . . .

The third requisite is that the school shall lead the normal student, after the educational study of the subjects of the school curriculum, through the broader study of man, body and mind, to find the principles of education which underlie all true teaching.

* See the catalogue of the State Normal School, Bridgewater, Mass., 1903-1904.

This study is invaluable for its influence "in expanding the mind, enlarging the views, elevating the aims and strengthening the character of the student." . . .

The fourth requisite is that the normal student shall be led to make a practical study of children, which he should do as fully as possible throughout the course, under intelligent suggestion."

The following is taken from the same catalogue :

"The ultimate object of the normal school is to make the normal student as far as possible an educator.

There stands before the company of pupils in every classroom a man or a woman to whom the eyes and hearts of all the children turn as their teacher. They live with the teacher, they measure the teacher, and gauge their action by what the teacher is to them. The teacher is the controlling force in the life of the school,—the guide, guardian, governor, exemplar, friend, educator of his pupils.

The teacher's personal relation to his pupils is most intimate. His personal appearance and bearing at once attract or repel. His personal habits are a constant help or hindrance to the formation of good habits in them. His thinking gives tone and coloring to their thought. His taste has much influence in forming their tastes. His moral character impresses itself upon their moral natures. His spirit is imbibed by them. The unspoken, unconscious influence of the teacher, which gives tone, quality, power to all his instruction, enters so deeply into the life of his pupils that his life affects their young lives for good or evil with great power.

Teaching is the subtle play of the teacher's life upon the pupil's life, to cause him to *know* what he would not acquire by himself; to *do* what he would not otherwise do; to *be* what he would not alone become. . . .

The normal student is to be educated for teaching. . . . A course of studies is the means to the teaching and training which occasions the activity that causes the development of the man."

I have ventured to quote thus at length that we might have before us a clear statement of the purpose and function of the normal school, in the language of one who, as principal of such a school, can see impartially the various departments of instruction. In the light of such statement we may proceed to consider the nature and function of the Art department as one of the factors in the school, aiding in the development of the normal student along the lines indicated.

THE SPIRIT OF THE TEACHER.

Primarily it may be premised that the work of the Art department should be one of the forces arousing in students the true spirit of the teacher. This is the spirit of the educational leader. In this country to-day the teacher is observed closely. He is recognized as

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a potentially strong influence in the life of the new generation. If he senses the possibilities of his position, he feels the need of insight that will reveal to him the full meaning of education. The normal student needs, beyond the study of any subject, to be aroused to this sensitive attitude.

"Education," in the words of Dr. Butler, "is the increasing participation of the individual in the spiritual life of the race." To lead normal students to comprehend the full significance of this definition is to imbue the work of the normal school with vitality. The accomplishment of this necessitates a study of Growth, what it is and what man's capacity is for it; a study of Participation, its voluntary quality, its social possibilities, its requirement of adaptation; a study of the Individual as portrayed by Prof. Shaler or Dr. Royce; a study of the Spiritual life as revealed by Emerson and Browning; a study of the Race seen in the light of evolution.

All individual subjects of the Normal School should be undertaken as an aid in the interpretation of this philosophy of teaching. This does not mean that in the Art department specific lessons and lectures must be given on genetic theory, but rather that no work be presented in the Art department save in the light of education in its full meaning.

Any normal teacher of high social ideals and impressed with the importance of individual life, of spiritual living, and the truths of evolution, finds his students reflecting his attitude. This is the attitude of the educational leader. Leadership implies a goal, a purpose clearly seen, a power to recognize an ideal, to inspire confidence, to overcome difficulties. In every class there may be found a few who lead and many who follow. How familiar we are with the group of students gathered around some strong personality ready to accept his decision and act at his direction. Every teacher must possess himself of the qualities of the leader; he must also be able to be led. Moreover he must cultivate assiduously that wisdom to discern whom he will accept for his leader, whom he will venture to lead; when and how he will assume the responsibility of guide, when and to what extent he will intelligently follow.

Normal students may rightly claim that their teachers shall help them reveal themselves to themselves in this respect. Each student needs to recognize his natural tendency and learn to be master of it. The bulk of the study which leads to a large understanding of education and of leadership must, of course, be carried on under specialists in education, but if the teaching of these specialists be not felt as an influence in the work of every other normal teacher, it loses a large measure of its value. The most the teacher of geography, history, science, mathematics, literature, art, physical culture, can do is to reveal the meaning of education and the significance of his subject in the light of this meaning, to help to lead students to think deeply and to find themselves and their opportunities. When each normal teacher does his share, there is shown to the student a unifying power and ultimate purpose which cannot but affect his life most powerfully.

Ask the members of an entering class to recall the impressions that former teachers have made upon them and to state the qualities they wish to cultivate in themselves. The replies will show their ideals to be knowledge, good breeding, patience, sympathy and enthusiasm. Beyond these they have not as yet learned to penetrate.

We may accept the desirability of the qualities our students name, but their time for a more fundamental insight has come. It is our privilege to lead them gradually to the conviction that knowledge is the result of earnest searching; that poise and patience are obtained through a struggle for self-control; that sympathy is the possession of him only who has learned to love humanity; that enthusiasm springs from the joy of achievement.

An introduction to the thoughts of such men as Dewey and Elliot, Royce, James and Butler; an encouragement to an intimate knowledge of Emerson and Browning; an arousing of interest in current thought as it appears in the writings of Mabie and Van Dyke; these with the inspiration caught from a normal faculty should move students to the conviction that "Wisdom is the principal thing."

THE STUDY OF ART.

One may not define so subtle, so universal a power as Art. The scope and breadth of relation of a creation may be measured by its tendency to evade definition. Definiteness means finiteness. The Infinite is indefinable.

Art is a product of human thought, feeling, emotion, and partakes of the nature of man—its immediate creator. Man is finite; his power of expression is limited, but his inner nature, his real self is a bit of the infinite and may aspire beyond earthly limitations, listen to melodies, feel the perfection of form and subtlety of color and the exquisite harmony of the life of poetic imagination. We apply the term "art" to products when they reveal this infinite longing. We call him artistic who seems to be in touch with the source of Beauty.

Man is a spiritual being in a physical environment. The former is continually lifting him into the atmosphere of perfection, towards Beauty in its completeness. The physical nature calls for material things. The response of the artist to these two needs results in varied forms of expression. Those forms which arise as the result of his spiritual uplift are the Fine Arts; those which are an attempt to beautify the material necessities of physical existence have been classed among the Minor Arts. The Fine Arts minister to the spiritual nature. The Minor Arts draw the things of use towards the source of the beautiful.

The normal student needs, first of all, to recognize the love of beauty as inherent in each human being and to know that in this love lies the germ of art for him. Second, he must realize that art is the expression of emotion, and that a work of art is great in proportion to the loftiness of the ideals which inspire it. Third, he must find art governed by the laws of nature—order, unity, balance, rhythm, harmony. Fourth, he must realize there are many media by which art may be expressed and that mastery of the technique of these is necessary to freedom of expression. Fifth, he must learn that the degree of his appreciation of art depends upon his sensitiveness as an individual to the influences which have guided and inspired the

artist. In the measure in which he as an individual cherishes and encourages the growth of his inherent love of beauty, he determines the degree of appreciation to which he may attain.

Besides all these a new interest in life is open to him if he will persistently and earnestly strive to master the technique of one or more media and try to express in simple exercises his own feelings. Whether he possess talent or not, there is an opportunity for expression—and to the law that power increases with effort, there is no exception in drawing. Though the expression as art be not great, the student by such expression promotes his individuality.

The above suggests the scope and nature of the work of the Art Department of a Normal School. There follows a suggested synopsis of what may properly form the subject matter of instruction.

I. *Art in the Construction of Objects.*

1. Form.
2. The principles underlying Construction.
3. Beauty in Form and Color.
4. Constructive Design.

II. *Art in the Enrichment of Objects.*

1. Form.
2. The Principles underlying Enrichment.
3. Beauty in Form and Color.
4. Decorative Design.

III. *Art in Pictorial Effects.*

1. The appearance of Form and Color.
2. The Principles underlying Appearance.
3. Beauty in the Appearance of Form and Color.
4. Pictorial Design.

IV. *The Fine Arts.*

1. Architecture.
2. Sculpture.
3. Painting.

ON METHODS IN GENERAL.

It is unfortunate but true that many a student of the art department feels that he has no talent for drawing, and is content with incomplete or even careless work. He does not know how to study, and is slow to grasp the meaning of education. This is true of a sufficient number of every class to make it necessary for a normal teacher to meet these shortcomings. To what extent we may neglect either the talented or the slow that we may advance the other, is an open question. After encouraging one of these supposedly talentless students to assume a self-confidence and put forth effort, and after witnessing his pleasure and pride as he acknowledges surprise at his own powers, one hesitates to neglect the slow. These students will teach somewhere and they need to cultivate all possible power.

Any student who can be graduated as a teacher can be led to do more and better than appears at first sight. When he begins to feel the coming dependence of pupils upon him and to recognize the value of drawing in education, he will find it worth while to exert himself. The effort he puts forth is of the very essence of the teacher-spirit, revealing himself to himself in a product he had supposed it impossible for him to produce. The habit of resting content with poor results disappears as the true meaning of education dawns.

The power to study is not so easily mastered. It needs some very definite directions, yet too much must not be done by the teacher, if the pupil is to gain individual power. Suggestions given must therefore become more and more general until the student can solve his problems alone. This he will be eager to do when he has learned to know the value of independent work.

The student usually brings to his work a happy and enthusiastic spirit ready to respond to opportunities, if he understands and feels his teacher's power. The art teacher must hold precious this responsive attitude. There should be recognition of the opportunities offered by daily exercises, for a cultivation of a love of beauty. Great art must be seen as a resultant of high ideals, and appreciation as a sensitiveness to these ideals. Law must be seen as underlying art; and technique recognized as a means to freedom of expression.

NORMAL METHODS.

Normal methods will be considered under the following heads :

1. The presentation of a comprehensive view.
2. Underlying principles.
3. The mastery of principles.
4. The pedagogical value of art.

I. THE PRESENTATION OF A COMPREHENSIVE VIEW OF THE SUBJECT: The "Outline" previously presented gives a classification which, with slight illustration, students can understand in a general way. A comprehensive grasp comes only as a result of the solving of consecutive problems with recognition of their relations and their value as educational means.

That no very extensive knowledge of art can be gained in the limited time allotted, is granted, but interest and appreciation of good work can be acquired. A measure of power to draw can also be gained by each student.

The result looked for throughout is a developement of the spirit which will later carry into some school-room such an interest in art that an atmosphere of beauty will pervade, that the room will be thoughtfully and lovingly arranged, that each exercise, whether it be in physical training, in mathematics, reading or science will manifest the influence of an artist teacher.

The principles of construction should be first presented to give a knowledge of form and an appreciation of accuracy. Enrichment adds a knowledge of color and introduces free hand practice. Pictorial representation should come later. This requires great keenness of thought and judgment and more artistic ability. The Fine Arts, appreciation of which is enhanced through experiences in the previous topics, should be taken up last. Noted works of art should be used in illustration throughout the course.

II. THE PRESENTATION OF UNDERLYING PRINCIPLES: Students should learn principles through practice. A student is aroused to the sense of the magnitude of teaching when he finds himself in charge of his classmates and responsible for the proper employment of their

time, and for the inspiration which must lead them to do good work. Nothing awakens a student-teacher so effectively as to find his class unresponsive, or unable to meet a test upon what he has taught. Hence the sooner this responsibility can be assumed without too much detriment to the class, the better. The responsibility must be adapted to the beginner and gradually increased until a student can lead a class completely through a topic with successful results.

It seems trite to mention the points which are necessary to thorough work on any topic—yet it is often by neglect of some of these that disappointing results appear. Five elements may be considered:

a. Examination of home work. One should look to see if suggestions have been followed. Has each student used his best effort? Which results are best artistically? The Normal student must be made to feel the distinction between a drawing technically good and a drawing which, whatever its shortcomings technically, is good because of the thought and effort which went into it.

b. Tests. From time to time exercises to be promptly executed, should be reviewed. These will reveal the power of each student.

c. Presentation of new work. Whenever new work is presented its relation to previous work and its power as an educative influence should be made evident.

d. Drill. Through this arises the opportunity for the teacher to assure himself that his presentation has been adequate.

III. THE MASTERY OF PRINCIPLES. That good drawing necessitates a knowledge of its governing laws is conceded. How to both master these principles and successfully use them within limited time is one of the art teacher's problems. Many would illustrate the principles in results, e.g. by making an envelope to teach the idea of the rectangle; by drawing leaves to teach foreshortening; by decorating portfolios to teach enrichment. Some would teach the "hard facts" first and use them in constructions, enrichments and pictorial compositions after they are known. Perhaps neither is the better method. A happy combination of the two is better than either alone.

It is quite possible to "practice" and "drill" too long in the effort to secure adequate technical expression. The art teacher may feel her disappointment in quality and quantity of drawings lessened in the knowledge that normal schools are sending out graduates not as "finished products" but as earnest seekers who hold self-development as a duty.

IV. THE PEDAGOGICAL VALUE OF ART: In Butler's "Meaning of Education" he says, "The child is entitled to his scientific inheritance, his literary inheritance, his aesthetic inheritance, his institutional inheritance and his religious inheritance. Without them he cannot become a truly educated or a cultivated man." In his elaboration of these topics one reads;—"The third element in education is the aesthetic inheritance, that feeling for the beautiful, the picturesque and the sublime that has always been so great a part of human life, that contributes so much to human pleasure, and accentuates so much of human pain and suffering. The ancient Greeks understood and used it, but a false and narrowing philosophy thrust it out of life and education for centuries because it was supposed to antagonize the spiritual or religious life. It was believed that the spirit could be chastened only by privation and by pain, by tearing it away from one whole side of human civilization, and by insisting that the human heart should suppress its feeling, its longing for the ideal in the realm of feeling and of beauty. The closet philosophers could accomplish their end in education for a time but they were utterly unable to suppress the builders of the Gothic cathedrals or the Italian painters of the Renaissance, and they have been unable to suppress the artistic element in human life. To-day we find it coming back to occupy its appropriate place. We should no longer think of applying the word 'cultivated' to a man or woman who had no aesthetic sense, no feeling for the beautiful, no appreciation of the sublime, because we should be justified in saying, on all psychological grounds, that that nature was deficient and defective."

"This great aspect of civilization, this great tide of feeling that ebbs and flows in every human breast, which makes even the dull and inappreciative peasant uncover his head as he passes through the

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wonderful galleries of the Vatican or the Louvre—is a necessary factor in adjusting ourselves to the full richness of human conquest and human acquisition. Unless we are to be mere hewers of wood and drawers of water, we should see to it that the aesthetic inheritance is placed side by side with the scientific and literary in the education of the human child. To-day we find art creeping into the school-room; instruction in color, in form, in expression, is being given. The growing child is surrounded with representations of the classic in art, and so, unconsciously and by imitation, he is being taught to adapt and adjust himself to this once forgotten and now recovered element in human civilization; an element that certainly is, like the scientific and literary elements, an integral part of the child's inheritance."

The art teacher in the normal school must feel himself as one of a body of teachers; he must see as his goal that toward which each of these teachers moves—the giving of young people the incentives to seek fundamentals. He must convince his students that increasing sensitiveness to refining influences is a necessary condition to aesthetic growth, and that the cultivation of the aesthetic nature is essential to complete living.



The Professional Schools of Paris

HENRY TURNER BAILEY

THE Professional Schools in Paris are a part of that complex and comprehensive organism, the French educational system, which directs or influences every grade of instruction and every kind of educational agency from the primary school to the University, and from the free lecture to the Prix-de-Rome. Their origin may be traced to certain conditions in the social and industrial life of the French people.

Primary instruction is compulsory throughout France. This instruction has never been considered as an end, by the French authorities, but rather as a means; something indispensable but insufficient; a rendezvous, so to speak, for all, from which each child is to start on his own proper course, a course determined by his taste, aptitude, family and social standing. The primary schools of France correspond with our primary and grammar schools, or, to be more definite, with our first seven or eight grades, those which hold the children from their fifth to twelfth or thirteenth year. The French educators discovered that at the end of this period of training, "Some children being better endowed intellectually, and belonging to families of moderate means, in easy circumstances, entered the superior schools to complete their instruction there, or the lycees or colleges to prepare themselves for the liberal professions or the universities. Others, (and they form a very large majority,) were hardly out of the primary schools before they were struggling with the difficulties and exigencies of life. Among this class a few continued their studies in the *cours complementaires*, but most of them, since they were poor or unwilling to ask their parents to make any greater sacrifices to keep them in school, entered a workshop that they might begin to earn a livelihood at once." *

* M. Lavergne, *Chef du Secrétariat de la Direction de l'Enseignement, Ville de Paris*. The quotation is from his authoritative work, *Les Ecoles et les Œuvres Municipales d'Enseignement*, Paris, 1900.

In these workshops they were supposed to be learning a trade. But were they genuine apprentices and destined to become skilled workmen? A brief review of the history of the crafts in France will make possible an answer to this question.

The characteristic feature of the trade-organizations under the old regime was the Corporation. It comprised first, the masters or master-workmen, who could open a shop, or work on their own account. Second, the journeymen, and third, the apprentices. The apprentices were compelled to pass a most laborious novitiate of four or five years, but at the end of it they possessed all the secrets of the trade. The master was allowed but one apprentice at a time, to whom he was bound by obligations from which he could not free himself, and which as a rule, he was anxious to fulfil.

At the head of each Corporation was a Board of Control composed of four or six members, who were selected from among the masters. This Board exercised a very strict and often despotic supervision over everything pertaining to the Corporation. Such an organization had its defects. The initiative of the artisan was paralyzed by a set of regulations that extended to the minutest details of his work. Moreover, not every one who wished was allowed to work. Work itself was a privilege.

But on the other hand, the Corporation maintained a high standard in the craft. Before being able to obtain the right and title of a journeyman, the apprentice had to prove that he was fully acquainted with every detail of his profession.

In 1776 Turgot, a minister fond of reforms, suppressed the Wardenships or Boards of Control, and the charters of the Corporations, and proclaimed the absolute freedom of work. The Corporations reappeared after his day, but only for a short time, for the National Constituent Assembly put Turgot's decree again in force. The law read:

"From the first of April next, every citizen shall be at liberty to take up any profession, art or trade that he likes. He merely has to secure a license and comply with the regulations." *

* Article 7 of the law of 1791.

This law substituted equal rights for all in place of privilege for the few, but it dealt a blow to craftsmanship, from which it has never recovered. There were many who foresaw the consequences of the law and raised their voices in protest. Marat, in his newspaper "The Friend of the people" passionately defended the Corporations.

"I am not sure that this complete liberty, this doing away with all apprenticeship, all novitiate, is a good thing. The first consequence of these insane measures will be to impoverish the state through the downfall of manufactures and the decay of commerce; the second will be the ruin of the consumer through eternal expense. If in greed for gain the natural desire of the workman to establish a reputation for good work is taken away, good bye to good faith. Soon every profession and trade will degenerate into sham. Since it becomes only a question of selling things, it is sufficient to give them a certain attractive appearance and to produce them to sell cheap, without being embarrassed by the thought of worth or finish. Goods will degenerate more and more until the consumer is driven to buy in foreign markets if he would have honest goods.* Events proved that this bloodthirsty sectarian had for once the clear foresight of a statesman.

At various times, under the Consulate, the Empire and the Restoration, there was something like a reaction in favor of the Corporations. Napoleon wanted (for a moment) to establish them, as an additional means of governmental control, but he soon abandoned the plan. In 1817 a petition representing thirty-four commercial and industrial professions was presented urging the necessity of reestablishing the corporations of merchants and the societies of arts and trades. The petition was rejected. In 1848 a similar movement towards reestablishment was equally unsuccessful. Turgot's doctrine prevailed.

A return to the medieval system would be impossible to-day, although many thoughtful Frenchmen still regret the passing of the Corporations. An impartial student of the history of French craftsmanship must admit that from the time of the Revolution there was a

* From *L'Ami du Peuple*, issue of March 16, 1791.

steady decline in the industries of France. French products no longer held undisputed supremacy. Manufacturers had to reckon with foreign competition. Rival industries beyond the borders of France began to encroach upon home industries. It became necessary to produce a great deal, quickly and cheaply lest the markets should be closed to the products of French industry. This ushered in the division of labor to an extreme degree. The workman became a specialist. He knew but a small part of his trade. Of every process but one, he was ignorant. His hand, instinctively and with a purely mechanical effort, made always one and the same detail. Ingenuity was not required, invention was at a discount, research was dead. While this unfortunate condition may have resulted in part from general economic causes, many of the keenest French thinkers attributed it to the decay of the apprenticeship system.

As early as 1840 Mr. Villesme, in his *Tableau* of the physical and moral condition of the workman, had lamented the situation. In the work of Mr. Corbon on Professional Instruction (1848-1854) the same note is struck. Similar complaints and fears are expressed in the report of the workmen delegated to the Universal Exposition of 1867. In short, from all quarters, an irresistible movement of opinion began to assert itself in favor of better training for craftsmanship. In Paris a society was formed to establish apprenticeships in the manufacture of opera glasses, and another society attempted to improve the manufacture of wall paper. Wealthy individuals established private professional schools, and others gave scholarships in them. Every thoughtful patriot felt that something must be done to rehabilitate French industries.

Meanwhile the City Government awakened to the need of discovering something to fill the educational void left by the disappearance of the Corporations. Its first expedient was the bank-book plan. By decree of August 8, 1845, the municipal council provided for the distribution upon the basis of success in competitive examination, of bank-books good for four hundred and fifty francs, applicable in fees to the amount of two hundred francs in the first year, one hundred and fifty in the second, and one hundred in the third year of

apprenticeship, in certain approved private institutions. This plan proved to be unsatisfactory. The teachers gave chief attention to the best students, and neglected the others. Moreover, among the children who carried off the honors there were many who belonged to families fully able to pay the expenses of their apprenticeship. Therefore, by order of the Préfect, June 21, 1855, the bank-book plan was abolished, and scholarships of two hundred and seventy-five francs were substituted to be distributed upon the basis of an examination and approval by specified agents. Any school with less than two hundred pupils had a right to one scholarship. Any school with more than two hundred pupils had a right to two, but to two only, though it had a thousand pupils. This plan was hardly more satisfactory than the first. The rank required for attaining the scholarship was too high, and the basis of distribution was unfair to the larger schools; hence there was on the part of the children, only a moderate eagerness to win the government's prizes. As a further encouragement to better professional training the City of Paris founded evening classes devoted especially to drawing. But all these were mere palliatives. The remedy was still to be found.

After the fall of the empire, the question of professional instruction in Paris was one of the first considered by the newly elected Municipal Assembly. On February 3, 1872, a bill prepared by M. Gréard, Director of Primary Instruction, was laid before this municipal Assembly by Léon Say, then Préfect of the Seine. This bill called for the creation of a school of apprentices in the iron and wood-working trades. In this bill, "a luminous and authoritative document," nothing was omitted that would emphasize the gravity of existing conditions, or justify the creation of the proposed school. M. Gréard claimed that the placing of the child with manufacturers upon his leaving the primary schools, a placing made hurriedly, without discrimination, and merely with a view toward immediate wage-earning, was disastrous in its outcome. He described the life at the workshop; the distrust of the workman who sees in the apprentice of to-day the workman who will crowd him out to-morrow; the indifference of the foreman whose mind is absorbed in affairs of his own.

He called it an intermittent apprenticeship without guidance or method, limited to acquiring a knowledge of some fragment of a profession or trade. He described vividly the errands out-of-doors forced upon the young boy, the dangers of the street, and those not less formidable of the shop, and concludes with these words :

"Thus, from whatever point of view the general conditions of an apprenticeship in Paris is considered, it does not meet the needs of the child. Want of foresight on the part of the boy's parents, indifference on the part of the patrons or masters, impotence of the law, everything seems to conspire against the apprentice. Even the development of commercial competition and the progress of industrial mechanics turn out to be to his detriment. Every one agrees that (generally) the shop, that ought to serve to develop all the forces of the child, wears out his body before nature has finished the making of it, puts his mind to sleep just as the school had begun to awaken it, stains his imagination, corrupts his heart, and poisons whatever spirit of craftsmanship or love of his trade he may have had. This deplorable school in individual morals, dwarfs the man in the apprentice, the citizen in the workman, and does not even produce a good mechanic." Here is an authoritative statement as to the character of apprenticeship in Paris, before the establishment of the Professional Schools.

The final report of a committee to which this bill was referred, came up for discussion on the twenty-seventh of May, and a vote was secured to establish as an experiment, and possibly as a type, a school of apprenticeship for the iron-working and wood-working trades. "This act was of the utmost importance, it meant a new standpoint, a new starting-point for professional instruction in the municipality of Paris. It was a step into the unknown, the unexplored. It was a venture involving some risk." * The future of French industries would be determined by the outcome.

As soon as the project had been agreed upon, work was commenced. The result was the establishment of the Diderot School on the Boulevard de la Villette. This school was opened in January

* Mr. L'avergne, *Les Ecoles et les Pauvres Municipales d'Enseignement*, p. 232.

1873. Seven years afterwards, in 1880, in a report addressed to the Préfet of the Seine, Mr. Corbon, a senator, bore witness to the rapid development of the school since its foundation, and to the ease with which its graduates obtained lucrative positions. He closed his report made in the name of the Committee of Inspection and Improvement of the Diderot School with the following modest words :

"The Committee feels confident that the problem which had been set before it will soon be solved, and that the first school of apprentices will be an excellent model to follow." *

The Professional school, is, therefore primarily a trade school, a school designed as a substitute for the old apprenticeship system.

Since 1880 Professional Schools of various sorts, after the plan of the Diderot School have been established by the City of Paris. These now number thirteen. In 1899,† the seven boy's schools contained a total of sixty-five studios, employed one hundred and sixty-seven teachers, and were attended by eleven hundred and twenty-three students. The six other schools are for girls. They contained in 1899, fifty-nine studios, employed one hundred and fifty teachers, and were attended by fifteen hundred and thirty-four pupils. All these schools have certain features in common.

Each of the professional schools is supervised by a Committee of Inspection nominated by the municipal council. It is composed of members of that assembly, manufacturers, merchants of recognized professional ability, a representative of the Ministry of Commerce, and a representative of the Ministry of Instruction.

The number of members is not specified by law, for, as M. Lavergne observes, "by limiting the number the privilege might have been lost of adding to the Committee in case of the need, a person whose aid was indispensable."

The powers of the committee are not inexorably fixed by law. Their duties are primarily administrative and financial, but inevitably

* *Rapport de la Commission de Surveillance et de Perfectionnement de l'école Diderot. M. Corbon, Sénateur, Paris, 1880.*

† The latest figures at hand. Report of M. Bedorez, *Directeur de l'Enseignement Primaire du Département de la Seine, Paris, 1899.*

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they become advisory as well, for upon each committee are men who are able to give valuable advice on technical matters. Each has therefore all the liberty possible. Its power extends even to the modifying of school programs in accordance with new needs, or the fluctuations of taste and fashion. It prepares the annual budget, audits the accounts, and in short, has charge of everything pertaining to the organization and management of the school.

But the Administration does not intend to divest itself of all powers of control. It sometimes moderates the enthusiasm of the committee, asserts its authority if rules are ignored or broken, and calls the committee to account if expenses exceed appropriations.

The committee of inspection by virtue of the very manner in which it is made up, is worthy of all confidence. In its zeal for the success of its school it may try to push ahead too rapidly, but its boldness is a corrective of the tendencies of the Administration towards conservatism and procrastination. The combined action of the two results in bringing about a healthy normal growth in every professional school in the city.

Each school is organized with Officers of Administration, and a Staff of Instructors.

In the schools for boys, the Officers of Administration are a director, a general superintendent, supervisors in varying numbers, and an accountant. In the schools for girls, the Officers of Administration are a lady director, who must be present at every session of the school, and an accountant.

The Staff of Instructors includes two groups: one giving general instruction, and another giving technical instruction. General instruction is entrusted to teachers of the standing of those employed in the higher elementary schools of the city. But each school employs a specialist in literature and science.

The technical instruction is in the hands of thoroughly trained men and women of recognized ability, each in his own craft or trade, and holding a municipal certificate to teach, won through competitive examinations.

The individual characteristics of these schools appear in their annual circulars, four of which are here represented as being typical of all:

THE MUNICIPAL SCHOOL

A PROFESSIONAL AND DOMESTIC SCHOOL FOR YOUNG GIRLS

12, RUE D'ABBEVILLE

The professional and domestic Municipal School was opened in the month of January, 1884. The purpose of its foundation was to permit young girls to obtain the theoretical and practical apprenticeship of a profession, while at the same time completing their primary education.

The instruction given is entirely free of charge. The pupils are day scholars. The school begins at 8.30 A. M. and closes at 5.30 P. M.

Three years of study are required to complete the courses, except in the case of pupils who study painting. The latter are obliged to devote four years to their work. In the commercial section only two years are required.

The working day comprises three hours of primary class instruction for the pupils of the first and second years. One hour of primary class instruction and seven hours of professional instruction are required for the pupils of the third year.

REQUIREMENTS FOR ADMISSION

The pupils must be of French nationality, at least thirteen years old, and not over fifteen. They must be admitted through the competition that takes place in July of every year.

Children when provided with the certificate of studies can appear at this competition as soon as they have attained the age of twelve years.

PROGRAM OF THE COURSES OF GENERAL INSTRUCTION

First and second years. Ethics and instruction in civil government.

French Language. Spelling, Style of expression, Elements of literature.

Business Arithmetic. Interest, Discount, Mental Arithmetic, Memorandums, Current Accounts, etc.

Elements of Geometry. Lines, surfaces, dimensions.

Accounts. The elements of bookkeeping and business law.

History. Comprehensive study of ancient history, History of the Middle Ages, Modern and contemporaneous history.

Geography. The five parts of the world; a detailed study of France.

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Elements of Physics. Weight, Hydrostatics, Heat, Sound, Light, Electricity.
Elements of Chemistry. Metalloids, Metals, Comprehensive study of organic chemistry.

Elements of Natural History. Physiology, Zoology, Botany, Geology, Elements of Hygiene.

Domestic Sewing. All kinds of mending.

Domestic Instruction.

The pupils of the three years' course in turn learn how to cook, and have practice in domestic work.

PROGRAMS OF THE COURSES OF PROFESSIONAL INSTRUCTION

SEWING

First Year. Progressive instruction. All kinds of stitches used on linen, wool and cotton. Practical work. Instruction in cutting. Drawing from casts and drawing from small figures (figurines).

Second Year. Children's clothes. Making of garments of all sizes. Cutting of waists, jackets, dressing-gowns, skirts, afternoon dresses, etc. Drawing from casts and from figurines.

Third Year. Suits for customers. Originating models. Changing patterns according to fashion. Cutting of all kinds of garments. Drawing from figurines and of finished suits. History of costume.

PAINTING

First Year. Drawing ornament, head, water colors.

Second Year. Drawing ornament, head, water colors. Painting on china and fans. Anatomy and Perspective.

Third Year. Drawing from Nature and from the figure. Water colors. Painting on china and fans. Anatomy, Perspective. History of Art. Composition.

Fourth Year. Same program as for the third year. Painting on glass, Enamels, Miniatures.

CORSETS

First Year. Stitches used in the sewing of the corset. Piping, binding, setting of busks, bodices, etc.

Second Year. Setting of whalebones, stiffening and making of simple corsets, and children-corsets.

Third Year. Corsets for customers. Study of cutting and fitting.

EMBROIDERY

First Year. Study of the different stitches used in embroidery. Practice in embroidery with over-and-over stitch, beading and spangling, Richelieu embroidery.

Second Year. Embroidery in shaded over-and-over stitch, Roccoco embroidery, ribbons, wire-ribbon blade, crocheting of the eighteenth century. Embroidery applied to furniture, dresses and fancy articles.

Third Year. Study of flowers, insects and birds made from water colors or nature. Embroidery with twist, with over-and-over stitch on both sides, gold thread embroidery. Appliqué goods and incrustations of lace on goods. Sampling. Study of the embroidery machine.

Note. A course in drawing is given twice a week for the pupils of the second and third years.

During the two years of study the pupils learn accounts, and the various systems of bookkeeping, business arithmetic, stenography (system of Trevost Delaunay), typewriting (Remington and Smith Premier machines), and English.

BERNARD PALISSY SCHOOL

APPLICATION OF THE FINE ARTS TO INDUSTRY

19 RUE DES PETITS HOTELS

The aim of the Bernard Palissy school is to train artist-workmen, skilful in certain art-industries such as Ceramics, Carving, Stone and Marble Sculpture, Designing for Fabrics, and Decorative Painting.

Four workshops are reserved exclusively for pupils taking the day-courses.

The instruction of the school is entirely free of charge. It includes besides the practical work mentioned above:

Drawing at sight. Linear Drawing, Modeling, Perspective, Comparative Anatomy, History of Art, and Decorative Composition.

N. B. Prizes for encouragement are bestowed on meritorious pupils following the day-courses.

Requirements for Admission:

Day-Course. All candidates must pass a graphical test which consists in drawing any object whatever, in relief, geometrically, and at sight. Two hours are allowed for each kind of reproduction.

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Two entrance examinations are held every year, one in February, the other in July. The date of the latter is made known to the public by posters in Paris. Candidates can enter their names at the Secretary's office of the school one month before the examination, from 8 to 11 A. M. They must be introduced by their father, mother, guardian, or the representative or foreman of a workshop. They must prove their French nationality by an authentic document, — the voting card, military certificate, naturalization paper of the father, or a certificate of the mayor of their town, or of the chief of police for their ward, testifying to their nationality. Candidates must be at least thirteen years old and produce:

1. A certificate of birth.
2. A certificate proving that they reside in Paris or in the suburban districts (indispensable conditions).
3. A certificate proving that they have been revaccinated.

Candidates who are of age are matriculated on their request. They must produce the documents mentioned above, or a resumé of all of them proving their standing, and attesting their morality.

The courses are given in the morning and in the afternoon, every day of the week from October to the end of July.

Note. Children whose parents reside in the suburbs may be admitted to the professional schools of Paris according to the rank obtained by them in the competitive examination, on condition, however, that the suburban districts to which the children belong, bind themselves to pay for each child a yearly sum of two hundred francs. (Decision of the Municipal Council of Paris, of April 10, 1889.)

Day Courses

The instruction given in the day courses is as follows:

Preparatory Year. Drawing at sight, Modeling from sprays and casts, Drawing from casts and models, Geometry and Projection.

First, Second, and Third Years, Pupils grouped in four classes:

Decorative Painters: Perspective, theory and applications. History of Art, with analysis of styles of decorative composition. Modeling, and Drawing from nature, large casts, and the figure in outline, light, shade, and color. Anatomy, Original Composition.

Designers: Drawing from nature, from casts, and from the figure in outline, light, shade, and color. History of Art, with analysis of historic ornament, Principles of Design, Original Design.

Sculptors: Perspective, History of Art, and analysis of styles in sculpture, Principles of Composition, modeling from nature, casts, and the figure, Drawing in outline, and light and shade, in pencil, charcoal and monochrome, Anatomy, Original Composition.

Potters: Perspective, History of Art, and analysis of styles in ceramics, Principles of design, and of decorative composition, Modeling from nature, casts, and the figure, Drawing from plant forms, and other natural objects, in outline and water color, Anatomy, Original Design.

Evening Course

The instruction given in the evening course includes :

Drawing at sight, in outline, and in light and shade, Perspective, Modeling, Comparative Anatomy, History of Art, and Decorative Composition.

No entrance examination is required for the evening course. The candidates must at least be fourteen years old. All other requirements are the same as for the day courses. The courses are given from 8 to 10 every day of the week from October to July.

BOULLE SCHOOL

TECHNICAL AND PROFESSIONAL INSTRUCTION IN THE ARTS AND MANUFACTURE OF HOUSEHOLD FURNITURE

57 RUE DE REUILLY

The Boule School was founded in 1886 by the city of Paris. Its aim is to produce workmen capable of maintaining the traditions of taste, and the excellence which are characteristic of true Parisian industry, in the artistic creations of household furniture.

It is a professional school in which the pupils after leaving the primary classes make their apprenticeship, and at the same time receive higher primary instruction appropriate to the craft they have chosen.

There are two sections.

1st, Section of Furniture, opened in September, 1886.

2nd, Section of Metals, opened in November, 1895.

INSTRUCTION

The instruction given at the Boule School is divided into two very distinct branches:

Professional Instruction.

Technical Instruction.

Professional Instruction

The professional instruction is given only by professors having charge of apprentices.

The crafts taught are as follows :

Section of Furniture: Cabinet work, Upholstery, Wood and Stone Carving, Joinery (benches and seats). Section of Metals: Chased work in its applications to household furniture, art bronzes, goldsmithing, jewelry or gemmery, including mounting. Engraving punches and matrices, dishes, jewels and various styles of engraving of no interest to the bookmaking trade.

For all: Turnery in wood and metals, Moulding and repairing.

The pupils of the section of metals have besides, practical exercises in Boring, Planing and Moulding in Sand.

Technical Instruction

The Technical instruction comprises :

Review of the studies of the Primary Instruction, Geometry, Technology, Industrial Economy, History of Art, Art-Drawing, Watercolor, Modeling applied to the arts of household furniture, Industrial Drawing, or Stereotomy of furniture and objects of art, with Cutting, Joining, Mounting and Estimates.

The choice of these studies permits the pupils

1. To perfect their primary studies.
2. To apply scientific processes to a good preparation for, and a swift and economical execution of orders.
3. To learn by way of drawing, the art of construction, and of decorating pieces of furniture.
4. To assimilate more easily the fundamental ideas of work as carried on in the shop, and to develop dexterity and taste.

The sum total of the knowledge thus acquired mitigates the bad effects of specialization, and includes everything a good artisan ought to know.

Visits for the purpose of study

To complete their theoretical studies, industrious pupils visit every year the museums, palaces and monuments of Paris or the provinces, which by their beauty or character, can add instruction to that of the professor. The pupils also visit factories and shops where they can see how the first materials are prepared. They also see there the various objects utilized in the industries of household furniture.

Supervision of Instruction

At definite periods the pupils of the first and second years pass short competitive examinations relating to decorative arrangement.

At the same periods the pupils of the third and fourth years make industrial applications of the arts of drawing and modeling, with technical descriptions, estimates and net cost.

The aim of these exercises is to discover the progress of the students and the progression of instruction.

Rewards

During the course of their studies the best pupils receive rewards varying according to the merit of each. These rewards consist of photographs of remarkable pieces of household furniture, and of works bearing upon the subjects taught in the school.

Pupils belonging to industries in which workmen are not provided with tools generally receive a whole set of tools or a part of it, as a reward at the end of their apprenticeship, provided they are deemed worthy on account of their work and spirit.

Meritorious pupils whose circumstances warrant it, are granted an allowance that may reach fifty francs a month for each pupil. The allowance is renewed every year.

Pupils passing successfully the final examinations receive a diploma. This diploma will aid them in finding employment.

Owing to the instruction received at the school, quite a number of pupils have been successful in the competitive examinations of artisans, and have been required to serve but one year in the army. The pupils of the Boule School have received numerous rewards at the various Exhibitions, and competitive examinations in which they appeared.

Rules of the School

Pupils must take their mid-day meal at the school. They may bring their lunch with them, or take, at their own expense, the lunch prepared at the restaurant of the school.

A lunch free of charge is provided by the municipal council for such pupils as belong to needy families.

Admission of Pupils

The school receives one hundred and two pupils every year.

Sixty, for the section of household furniture. Forty-two, for the section of artistic metals.

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These pupils are selected by competitive examination.

The entrance examinations relate to the subjects of primary instruction. Moreover, a drawing at sight is required from every candidate.

No one is enrolled on the list of candidates unless he is a resident in the department of the Seine. He must also be thirteen years old at least, and not more than sixteen on the first of October of the year in which the competitive examination takes place.

Documents to be produced for enrollment of candidates desiring to compete, in order to follow the day-courses of the school are as follows:

1. A declaration countersigned by the chief of police, attesting that the parents are French and bona fide residents of Paris, or of the department of the Seine. However, children whose parents reside in the suburban districts can be admitted to the school according to the rank obtained by them at the competitive examination, if the districts to which they belong bind themselves to reimburse the city of Paris by a yearly sum of two hundred francs, for every pupil. (Decision of the Municipal Council of Paris, of March 27, 1893.)

2. A certificate of Birth.

3. School-records.

4. A certificate of primary studies or an equivalent certificate.

5. A certificate of revaccination not more than two years old.

6. A certificate of the physician of the Boule School, stating that the candidate has a good constitution. (The Doctor visits the school on the day which is announced at the time of enrollment.)

ESTIENNE SCHOOL

PROFESSIONAL INSTRUCTION IN THE ARTS AND INDUSTRIES OF BOOK-MAKING

The aim of the municipal school Estienne is to bring out workmen that are skilful and well instructed in the arts and industries of book-making.

The instruction is free of charge. Lunches are given gratuitously by the Municipal Council to pupils belonging to families in need.

The pupils are day-scholars, School begins at 8.30 A. M. and closes at 6 P. M.

Duration of studies is four years.

During the first four months of the first year the pupils work in all the shops of the school; then they are distributed, according to their aptitude, in the shops where they are to make their apprenticeship.

At the end of the first and second years the pupils must pass an examination before they can be promoted to the higher classes.

A certificate of apprenticeship is given to the pupils at the end of their fourth year.

Rewards are bestowed at the end of the fourth year, and according to their merit, on pupils having passed all the final examinations.

Program of Instruction

Technical Instruction

From 1 to 6 P. M.

Typography (four professions). Letter-foundry. Composition and Correction, Printing (Hand presses and machine presses). Stereotyping and Galvanoplastics.

Lithography (four professions). Lithographic Drawing and Chromolithography, Lithographic writing. Engraving on Stone. Lithographic printing.

A complementary course, Autography.

Engraving (four professions). Engraving on wood and in relief, on copper plate. Printing on copper plate. Photogravure (one profession). Photography, and photo-mechanical processes.

Binding (two professions). Binding. Gilding on leather.

Complementary Courses. Gilding on edges, Marbling, Modeling and chasing of leather in relief.

Theoretical Instruction

from 8.30 to noon

French Language, History and Geography, Rudiments of Mathematics, Physical and Natural Sciences applied to the Arts and Industries of Book-making. History of Art. History of Book-making. Modeling. Drawing at sight. Industrial Drawing and Decorative Composition. Writing. Gymnastics and Military Exercises.

Requirements for Admission

To be admitted to the competition every candidate must be thirteen years old at least, and not over sixteen.

The entrance competition will comprise three written tests: 1. A dictation. 2. Two problems in arithmetic (simple applications of the four operations in simple numbers, decimal numbers, fractions, and the metric system). 3. A Drawing at sight (simple ornament).

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Candidates not receiving a sufficiently high mark at the drawing-test cannot be admitted to the following shops: Lithographic Drawing, Lithographic Writing, Engraving in relief on copper and steel, Engraving on wood, Engraving on copper plate, Gilding on leather.

Candidates enrolled on the list of admission will have to pass a medical inspection at the end of the Academic year. They cannot be definitely admitted before the physician of the school has found them physically able to follow the professional courses.

Pupils are registered every day from 8 A. M. to 6 P. M. until July 4, inclusive (on the premises of the school, 18 Boulevard d'Italie).

The Documents to be produced for registration are:

1. Certificate of Birth.
2. Certificate of primary studies.
3. Certificate of revaccination not more than one year old.
4. School-records.
5. Certificate that the candidate is a Frenchman, and his parents actually reside in Paris.

Note. Children whose parents reside in the suburban districts can be admitted to the Estienne School according to their rank obtained at the competitive examination only on condition that the suburban districts where their families reside bind themselves to pay in advance two hundred francs a year for every child. (Decision of the Municipal Council of Paris, March 27, 1895).

Every pupil must take his mid-day meal at the school. He can bring his lunch with him, or take one at the restaurant of the school at a small expense.

The public is invited to visit the school on the first Thursday of every month at two o'clock.

These circulars, detailed as they are, do not give all the elements of training offered by the schools. There are excursions to the parks and outlying districts for sketching from nature, to some of the forty-four museums of the city for study of the collections, to the manufactories to observe processes of construction, etc.

As a rule, the mornings are devoted largely to the general courses, and the afternoons to the technical courses, or the mornings to lectures, and the afternoons to studio work.

The walls of the rooms are hung with the most successful works of graduates of the school, as well as with photographs and casts of masterpieces. In some cases the walls and windows have permanent decorations made by the pupils.

The methods of instruction are as direct and as thoroughly correlated as possible. In the History of Art, for example, the instructor while lecturing, draws from memory upon the board the illustrations he requires, no matter how complex. The pupils take notes in pencil (which are afterward corrected and copied in ink) and copy his drawings as he makes them. The board is of ground glass, in some cases, and of a middle value gray. Upon this the instructor draws first in outline, indicating the geometric and perspective construction; upon these constructional lines he completes the drawing using white chalk in the lights, charcoal in the darks, and colored chalk wherever it will help to delineate the original object. The pupils have note-books with leaves of gray paper upon which they work with black, white, and colored pencils, following always the instructor step by step. The pupils thus receive instruction in the history of art, in the method of teaching, in the method of drawing, and have practice in drawing at the same time. The instructors are thoroughly trained masters, with the history of art, perspective, anatomy, costume, or whatever they teach, not only at their tongues' ends but at their fingers' ends. Their blackboard drawings are models.

The work required of the pupils may be characterized as disciplinary and practical. Drawing with the point precedes water color; water color on dry paper with the utmost precision of touch precedes water color on moist paper with blended hues. Truthful perspective, correct proportions, detailed graphic description, faithful coloring,—these are the requirements, these are the essentials. Originality, artistic effect, clever technique,—these may come later if the pupil has genius. The applications are ever in the realm of the immediately useful. In an exhibit of the Bernard Palissy School, I noticed original designs for program covers, book-plates, letter-paper stamps, hand mirrors, dressing tables and their furnish-

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ings, desks, inkstands, penholders, blotter-pads, cups and saucers, flower-pots, bowls, utensils for the fireplace, folding screens, etc. In the girls' school, Rue d'Abbeville, designs for fans, for the decoration of cups, saucers, plates, vases, for doilies, towels, embroideries of all sorts, cuffs, collars, silk things of many kinds, miniatures on ivory and glass.

Pupils are promoted from year to year upon the recommendation of teachers, and the attainment of excellence in results. At the end of the course, however, certificates are granted not upon the testimony of teachers, nor according to the judgment of any group of school officials, but according to the decision of a competent jury of professional men not connected with the school, men engaged in business, artists, printers, potters, milliners, decorators, dressmakers, manufacturers, whose judgment is recognized everywhere as authoritative. The successful pupil must produce a brooch acceptable to the best jewelers in the city, a costume approved by the best modistes, in workmanship the equal of the goods sold in the best shops.

The furniture produced in the Boulle School is so good that the furniture manufacturers of France have been able to secure legislation prohibiting its sale.

The city awards not only certificates and diplomas but prizes for excellence in results, and these prizes are often in the form of appropriate books, beautifully bound in red morocco, and stamped with the seal of the city and an inscription beginning with the precious words "From the City of Paris."

The maintenance of these thirteen professional schools costs the city of Paris annually about 1,750,000 francs, or \$350,000.

Of course there are critics who doubt the real utility of these establishments built and maintained at such expense, and who declare that the results do not justify the outlay. "But," says M. Lavergne, "There is nothing in the present situation that would justify these fears or explain these discouragements."

"The Estienne School, the School of Physics and Chemistry, the Schools of Drawing, Germain Pilon, and Bernard Palissy, the Diderot School, and the Boulle School are excellent nurseries from

which a great number of artists, physicists, chemists and workmen come forth, capable of earning a livelihood immediately, well acquainted with all parts of their trade or craft. Having come in contact with the real and practical work of the shop, they are able in a short time to become themselves foremen and directors.

"The average pay of the graduates at the Diderot school, for instance, in 1899, was 75 cents per day, but the salary for many of them was 80 or 90 cents, and for certain pupils \$1.00 per day. At the Estienne school, the rate of salaries is generally higher. The average pay in 1899 was 98 cents, the minimum 60 cents, the maximum \$1.80 per day.*

"Among the pupils terminating their studies in this establishment every year, there are some who go elsewhere to complete their professional education; others enter the school of Fine Arts, where they are speedily classified among the best students. In 1898 the first and second great prizes offered by the Government were obtained by former students of the Estienne school. It is true these are instances of exceptional success obtained by choice students endowed with remarkable aptitudes, but they, nevertheless, bear witness to the great value of the instruction given in that establishment. But if we confine ourselves to the average results obtained we shall see that the pupils of the Diderot and Estienne schools receive at the end of their apprenticeship, salaries that are rather high, considering their age.

"As to the pupils of the Boule school, the pay after leaving the school fluctuates between 60 cents and \$1.60 per day. For those of the Germain Pilon school, the monthly compensation is rarely below \$20.

"As to the pupils in physics and chemistry, they easily find positions properly remunerative in private industries. Some find employments as chemists to the government, in the department of Railroads, or in the Custom houses.

* The cost of living in Paris is so low as compared with the cost in America, that these sums must be read as representing at least double their face value.

"It is proper to add, that the situation shows everywhere a tendency to improve from year to year, as any one may discover for himself by reading the reports of the Committee of Inspection, accompanying their annual estimates for appropriations. The most confirmed of pessimists will find therein reasons for believing in the vitality and usefulness of our professional schools for boys. We have just as much confidence in the future of our professional schools for girls, although at first sight the results seem less favorable.

"The proportion of young girls practicing (after leaving the school) the profession in which they have been apprentices, is not very high. On the other hand, there are many girls whose situation is not known, or who go back to their families. Those who find a position in the workshops have in the beginning only a very moderate salary. But the facts are that well-trained girls after a short time have their salaries increased. Their work speedily becomes remunerative. Most pupils leave the school when they are eighteen years old. At that age one is not supposed to have arrived. The statistics of the last year are (everything considered) rather satisfactory. Without doubt, in the professional schools for girls, as well as in those for boys, quite a number of students do not go to the end of their studies. They withdraw after their second year of apprenticeship, sometimes even after the first year. The reason for this state of things is complex. But usually the cause is the impossibility of the family making any farther sacrifice. The children must work. The city of Paris, it is true, maintains scholarships, but they are few in number, and the amount of each is small. In many cases the scholarships provide but an insufficient relief for the families. The scholarships ought to be increased in amount to meet the needs of young girls whose parents are in straightened circumstances.

"Moreover, the girls at the end of their apprenticeship sometimes find difficulty in getting a position. They need advice and protection. The guardianship of the school must extend beyond the school. The committee of inspection, and the lady directors, do not lose sight of the young girls when they leave the school, but

endeavor to make easy their first steps, and to assist them in every way possible.

"But let us not fail to notice that if a certain number of pupils, after once finishing their apprenticeship, simply go back to their families, they nevertheless, derive an advantage from what they learned during the three or four years spent in the professional schools. They have acquired manual dexterity and taste. They know how to sew, embroider, make a dress, a hat, in fact they can do everything that is necessary in a well-to-do household.

"We are convinced that the condition of our Parisian professional schools (already good) will be but improved in the future. At all events the contingency of retrogression cannot be thought of.

"Let us not touch what exists, except to amend or complete what needs to be amended or completed. Everywhere these schools are respected; they are appreciated by the common people. They are helping to solve the very grave question of adequate apprenticeship."* They have had a strong influence in restoring to France her prestige in the artistic handicrafts.

* M. Lavergne, *On the Professional Schools*, Book V, Chap. I, Section VII.



The Manual Arts in Extension Schools

SOLON P. DAVIS

THE movement for instruction in the manual arts as a factor in education is not the response to a demand of genetic psychology alone; it is a natural outgrowth of the industrial era through which we are passing. Indeed, a close study of the history of the introduction of the manual arts into our system of public education will reveal the fact that they were first established in response to an economic argument and that the more profound reasons for their retention and development have been a result of the physiological and psychological research connected with the child study of recent years.

Profound changes have taken place in our national life since the establishment of the public school by our forefathers. The great and increasing tide of immigration has developed a problem of assimilation and amalgamation not to be entirely solved by a public school system which provides only for the children of the people. Our over-crowded cities, with their industrial conditions and problems unknown in other days, have brought in new questions of public policy.

The early, comparatively simple, occupations of a scattered population have been replaced by the concentrated industries, the labor-saving machinery, intensified production, and highly specialized work of crowded industrial centres.

Increasing difficulty on the part of artisans in the acquirement of a trade and a decline of the apprentice system are a result of these new conditions.

With the general cessation of apprenticeship as formerly understood, it is only in the school workshop that the young artisan has any adequate opportunity of learning the use of the implements and

appliances connected with his trade, and in those industries where automatic machinery is gradually displacing hand labor, he is altogether dependent upon school training for any knowledge he may wish to acquire of the processes involved in the particular manufacture in some small section of which he is exclusively engaged.

Moreover, the fact that, in the United States, the average number of years spent in school by each member of the population is but a trifle in excess of five, indicates that in addition to the recruits of labor from other sources, there must be introduced into our industries annually, a vast army of boys and girls whose probable future under our industrial conditions will be the monotonous specialized work which saps energy and destroys ambition more effectually than any other untoward condition of life.

Statistics recently gathered in connection with a public evening trade school show that of those who applied for admission to its several departments, very few had completed a high school course, only about twenty-five per cent. having had any part of such a course. About the same number had completed a grammar school course. The remaining fifty per cent. did not complete the grammar school life.

The general movement, which is gaining ground, for the shortening of the hours of labor in various trades, together with a widespread manifest desire on the part of artisans for better conditions for themselves and their families, and the discussion of the best use of leisure time, have been accompanied by an increasing interest in the subject of extension schools. That there is a widespread and growing demand for adult training, not met by academic or technical schools, especially along lines directly related to the manual arts, must be evident to any close student of the times in which we live.

Broadening commercial relations and, especially, the international expositions of recent years, have emphasized the importance of and demonstrated the necessity for greater technical and artistic excellence in our manufactured products, as determining commercial values, if we are to compete with other nations in the marts of the world. The prevailing conditions affect not only or chiefly the

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individual, or any given class in the community; they have direct relation to our social organism and national interests.

Individual enterprise and control in industry have largely given place to corporate activity, with a consequent lessening of direct relationship between employer and employed, so that we have in effect, a new social order, with less intimate personal relationships than formerly, yet with greater mutual concern, and, therefore, with educational problems peculiar to the time, and not to be solved by an appeal to tradition.

Our unexampled industrial progress and developing international trade relations have led to the prophecy of a world-wide industrial contest, and European nations are preparing for the struggle not by the increase of standing armies, but by the establishment of technical and trade schools, both for day and evening work, far exceeding in numbers and efficiency those heretofore known.

In Germany almost every town has its technical school. In Chemnitz, the great weaving center, there are not only textile schools but thirty schools where children are taught to make braid and trimmings. In the Hartz mountains there are schools for toy makers and other trades; in the Ruhr section there are many schools in which all branches of the iron and steel industries are taught, with classes for foremen as well as laborers. One of the peculiar features of this German technical education is a Sunday School for practical instruction to mechanics in their trades. There are numerous technical schools in Berlin and other cities for masons, tinsmiths, tailors, saddlers, printers, painters, bookbinders, etc., etc.

Austria has a large number of industrial schools, all under the Minister of Education. There are schools for foremen covering every branch of mechanics, schools also for embroiderers, lace makers, stone cutters, for workers in pottery, glass-making, the grinding of precious stones, and for textile manufactures.

Switzerland has numerous schools of this sort. Belgium and France have trade schools for girls as well as for boys. Russia has developed schools for artisans in the textile and other industries, which are widely known.

Sweden has its system of continuation schools and workshops for children, its working schools for disabled people in which instruction in the manual arts is afforded, and has in process of organization evening technical classes, especially for mechanics, under the name of professional schools.

The Municipal Art and Trade Schools of England are no exception to the movement with which all Europe seems astir. In the "National Competition of Schools of Art, Evening Schools and Day Classes" for 1904, there were sent up the following works for examination:

- 25,354 from 270 schools of Art and Branch Schools,
- 9,420 " 199 Science Evening Schools and Day Classes,
- 5,473 " 369 Art Evening Schools and Day Classes.

Of these 6,460 works were admitted for National Competition, and the 500 works receiving prizes are on exhibition at the South Kensington Museum, at the present time. These works include:

1. Modeling from the Antique.
 The Figure: In the round, in relief (from figures in relief and in the round).
 Ornament: from casts and photograph's.
 Foliage from Nature.
 The figure: In the round and in relief.
2. Drapery. Foliage.
3. Modeling. Design.
 Articles for use and ornament.
4. Drawing from the Antique.
 Anatomical studies. Painting in monochrome from cast.
5. Drawing and painting from the living model.
6. Painting, from flowers and still life.
7. Drawing, foliage, landscape details, etc. from Nature.
8. Design. Book illustrations, color prints, posters, lettering, book covers and leather work, laces, embroideries and damasks, stencils, carpets, woven textiles, wall papers, printed muslins, hangings, mosaics, linoleum, parquetry

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furniture, interior decoration, stained glass, iron work, gold and silver work, enamels, fans, jewelry, tiles, pottery, flat ornamentation.

9. Architectural and mechanical drawing and design.

The intellectual activity of these countries in providing industrial facilities for their artisan classes indicates clearly a policy which must become general among nations with great industrial and commercial interests.*

EVENING SCHOOLS.

Under the pressure of the conditions of our time, we are revising our ideas of educational values. The manual arts, which have taken their place in our day and evening public schools from an economic as well as an educational standpoint, are henceforth to be reckoned with in all our educational thought.†

Among the responses to the demand for adult training, none is more significant or noteworthy than the increase in opportunities for evening study. In many places the public school buildings have been thrown open in the evening, not only for educational purposes, but as social centers for the neighborhoods in which they are located. Trade schools have appeared in various cities. Correspondence schools have been established. Evening educational facilities have

* "The race for industrial supremacy is on. The first three places are undoubtedly held by England, Germany and the United States. In view of the need of economic progress it is not difficult to see that the outcome of the feeling of unrest which now pervades the educational world will be the enlargement of the sphere of technical education. All the signs of the times point in this direction. The trained technical man is rapidly taking the place of the untrained man. No nation can successfully oppose this world-wide movement. When the philosophers, educators and economists have risen to a full comprehension of the meaning of the present world-wide educational unrest, they will see that the solution of their doubts and anxieties lies in a fuller and more comprehensive development of the sphere of technical education."—*Victor C. Alderson*.

† "The educational value of any subject must be determined not by what it does for the pupil while in school, but also by what it contributes to his future development *all his life*. A study may have a high educational value while it is being pursued, but if it is completely dropped when school days are over and does not connect directly with anything in practical life, it may be of less value than a trade which is pursued through life. The school ought to begin a development which is afterward continued by environment in order that the process of education may be a continuous one. To teach a man a trade by which he may earn all his life a dollar or two a day more than he otherwise might have earned, is to place his whole life upon a higher plane than it otherwise would have been. It means more of the amenities of life for his family, it means books and pictures, music and education, as well as social opportunity and position."—*Thomas M. Balliet*.

been developed in connection with the work of the Young Men's Christian Associations, and the Social Settlements, as well as on the part of endowed institutions like the Pratt and Drexel Institutes, Cooper Union, and others.

Meanwhile the increase in the number of public evening schools has been noteworthy. The increase of interest in industrial problems at large has had its influence upon the courses of study in all extension schools and upon none more significantly than those of the evening school. This influence will best be realized by a study of the work going on at present in some of the more prominent cities.

In two types of evening school the manual arts appear. These may be designated as:

1. The Specialized School.
2. The General Evening School, with department work in the manual arts.

THE SPECIALIZED SCHOOL

Schools of this class are comparatively few in the United States. Examples are to be found in the New York Trade School, the Springfield Evening Trade School, the Cooper Union Free Night School, Pratt Institute Evening School, Baron de Hirsch Trade School, St. George's Evening Trade School, New York City, the Newark Public Drawing School, Newark, N. J., the Trenton School of Industrial Arts, Trenton, N. J., the Lowell Textile School, Lowell, Mass., and the Rhode Island School of Design of Providence, R. I.

Differing somewhat in their courses of study, these schools have, in common, the manual arts as their basis of organization, and deal exclusively with their problems. The New York Trade School is a good illustration of the Specialized School. It was founded by the late Col. Richard Tylden Auchmuty in 1881, earliest among such schools in this country. It offers courses in carpentry, plumbing, electrical work, steam and hot water fitting, pattern making, metal work, blacksmithing; house, sign and fresco painting, printing, plastering and bricklaying. The course of instruction is so arranged

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that both the practical and theoretical branches of a trade are taught. Of similar organization are the Baron de Hirsch Trade School and the Lowell Textile School.

An example of the general character of other specialized schools noted may be found in the Trenton School of Industrial Arts, which has courses in Theory and practice of applied design, Modeling, Free Drawing; (Antique and Life Classes;) Color, Illustration; Rug Making, Ceramics; Book Binding, Wood Carving, Machine and Architectural Draughting. This school has the advantage of the neighboring museum, containing among other treasures the Alice Maddock collection of pottery. There is here the basis of a permanent trade exhibit. The work is fostered by a contemporary club of ladies, and supplemented by courses of lectures, etc.

In the Mechanics Arts High School of Springfield is conducted a public evening school of Trades. This school offers courses in mechanical drawing, machine shop practice and tool making, plumbing, wood working, pattern making, shop mathematics and electricity. It is planned that the classes in mechanical drawing and in shop mathematics shall be so organized that all students may take a common course in the elementary processes, to lay the foundation for specialization, while for specialized instruction the men are grouped in classes according to their trades, so that they may be given a teacher who knows the trade and can give the students instruction as to its details. In both these classes and those of the freehand drawing school, the relation of academic instruction to its application in material is carefully kept in view, with distinct advantage both to morale and progress.

Established in 1898, the growth of this school has been exceedingly encouraging. The classes in machine shop practice and tool making have more than doubled during the past three years, exhausting the capacity of the shop and creating a waiting list of applicants. The enrollment is over three hundred, and the attendance remarkably constant, showing a much higher percentage than is common in evening schools. It is not the function of this school to train apprentices as such, but to supplement the imperfect and highly specialized

training of modern shops by giving machine hands, helpers, and apprentices, so far as there are apprentices, an opportunity to gain practice in a greater variety of work than would ever be open to one man under the modern system of machine production. The statistics gathered with relation to this school show that 70 per cent of the men enrolled were seeking a broader training than they were able to obtain in the shops where they were employed; of the remainder a large majority gave as a reason for taking the course a desire for promotion in classified service.

The school offers three years' courses in the following branches: Mechanical drawing, machine shop practice and tool making, joinery, wood turning and pattern making, shop mathematics, and a two years' course in plumbing and electricity.

The Free Hand Drawing classes are organized in elementary, intermediate and advanced grades, with practical courses; though as yet no provision has been made for the direct application of work in the line of crafts.

Organization. The usual form of organization of the specialized school is that of a Board of Trustees or Control, with faculty and officers of instruction appointed by it, and department or trade committees having advisory or supervisory powers.

These schools ordinarily offer both day and evening courses in the studies included in their curricula, the evening courses being, usually, limited to the winter season (October to April). These evening courses, however, in the best schools, are carefully graded and held to the same standards which govern the day classes, the necessary work to secure the diploma of the school simply requiring a longer period of time. Certificates of progress are given, based upon the examination of each season's work, the quality and continuity of these certificates having direct bearing upon the final award of the diploma.

Curricula. The curricula* of these specialized schools varies with the situation of the particular school, being largely determined by local conditions. All manual arts which require serious and pro-

* See appendix I.

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tracted study are properly included in their range so that these institutions, while sharing a common purpose and form of organization, offer a variety of studies.

A conspicuous example of this is the Lowell Textile School, which offers instruction in the theory and practice of manufacturing all fibres known to the textile industry. This school is in a manufacturing center where all forms of weaving are done. Although proposed early in 1891, this school was not determined upon until the organization, methods and scope of foreign schools, especially in England, France, Switzerland, Germany and Russia had been carefully studied, and their value to the industries of the country named, determined.

Methods. Methods in the presentation of subjects in these schools are determined by the character of the schools themselves. The primary thought in their conduct is not the education of professional artists or scientists, but the principles of science and art are taught with a view to industrial and commercial application. They offer to graduates of universities and scientific institutions, incidentally, however, the advantage of technical instruction in the application of theoretical study.

In the most successful schools where an adequate endowment admits of complete equipment, the combination of theory and practice is admirably carried out, and the artisan secures a training far more complete and with much greater economy of time than was possible under the most favorable apprenticeship conditions.

Regulations. Certain requirements as to certificate of previous training, or examinations, usually determine entrance upon the course of study in any of the departments of these schools, and instruction, while considering individual needs as far as possible, is so graded as to insure the advancement and certification of those who are working for full graduation. Examinations are generally held at the close of each term and only those students are advanced to the work of any given year who show satisfactory progress in the final examinations of the preceding season. Faithfulness in attend-

ance and work is stimulated by the yearly certificate plan, with the full diploma for a complete course.

THE GENERAL EVENING SCHOOL

General Evening Schools with departments devoted to work in the manual arts are rapidly increasing in the United States. They include the public evening schools, a feature of our educational system since 1850, and the schools organized by Young Men's Christian Associations, University Settlements, and similar agencies.

The growth of the movement for the establishment of public evening schools is indicated by excerpts from the last report of the Commissioner of Education, which states that during the season of 1902-3 over 207,000 pupils were gathered for instruction in such schools in the United States. Over 100 of the 569 cities exceeding 8000 inhabitants offered evening school privileges to all who would avail themselves of the opportunity. *Twenty-eight states are represented upon the list.

Springfield, Mass., affords, perhaps the best example of the trend of extension work in municipal evening schools at the present time. Its fine Central High School Building, with modern equipment, is open for evening work in secondary studies, including a department for freehand drawing, with classes in elementary work and in life drawing, pictorial composition and work, the theory and practice of design. All work in this department is subject to the approval of the Supervisor of Art Instruction in the public schools.

Instruction in some of the manual arts is a part of the University and other Settlement work of New York and other cities, and of the Educational Alliance of New York City where classes in drawing and painting, art needlework, millinery, dressmaking, and basketry are maintained.

The evening work of the Young Men's Christian Association of New York City may doubtless be accepted as a type of that which is

*States maintaining evening schools, 1903-4:—Arkansas, California, Colorado, Connecticut, District of Columbia, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Missouri, Nebraska, New Hampshire, New Jersey, New York, Ohio, Oregon, Pennsylvania, Rhode Island, Tennessee, Vermont, Washington, Wisconsin.

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being done by a large number of the more important associations of the United States, from which 275 associations report 1430 paid teachers, 2492 different classes, with 30,622 students enrolled during the past season.

The Young Men's Christian Association of New York has fourteen branches in various parts of the city, exclusive of those for soldiers and college men. Under its auspices evening educational work is carried on with classes in forty different subjects, those in the manual arts being as follows: drawing, (freehand, architectural, mechanical); carriage draughting, structural engineering; applied design, machine design; water color; wood and metal working, plumbing; art in house furnishing and interior decoration; lectures on architecture, interior design and furnishing; painting and sculpture.

A course of Art in House Furnishing and Interior Decoration, for the education of salesmen, furnishers, manufacturers and purchasers, was organized by the West Side Branch, New York City, during the past season. So far as is known to the writer this is the first course of its kind to be given in this country. Its instant success indicated the real demand to which it offered response.

It is the purpose of the present paper to discuss in this connection the organization of classes in the manual arts as they appear in the public evening school. Much that applies to the latter is applicable, however, to other classes of a similar nature.

Organization. The work of the general evening school must consider more closely than the specialized school the needs of individual pupils, and provide for many who are prevented by the exigencies of life from attendance upon an extended course, but in the best schools a careful grading of the work insures an opportunity for those who can attend for several consecutive seasons, to secure not only thorough and systematic training but a certificate of proficiency or diploma which attests a completed course of study.

The Springfield evening schools, already noted, afford the best example known to the writer of a completely organized system of public evening instruction. The work is under the care of a Special

Committee of the School Board and is personally supervised by the Superintendent of public schools.

The department of Manual Arts is in the hands of experts, the Evening School of Trades having as its principal the head Master of the Mechanic Arts High school, while the work of the Free Hand Drawing school is under the direct supervision of the director of art instruction in the public day schools of the city.

Curricula. In common with specialized schools the curriculum* of the general evening school, so far as the manual arts are concerned, must be determined, to a large extent, by local conditions. Its range, while more elastic than that of the specialized school, should never include subjects other than those which require serious study, though the conditions under which they are conducted admit of shorter courses.

The work thus far attempted in general evening schools, with a few exceptions, notably that of drawing, does not relate itself to the great industries, and is not of a very serious nature. It is too early yet in the progress of the movement to determine whether under their necessary limitations these schools can do the work of the specialized school, or satisfactorily solve the problems of our industrial conditions.

There is great need of technical trade schools of the grade of the high school, for the education of foremen and superintendents of shops—men who stand between the highly trained engineer and the mechanic. There can be no doubt that evening schools of this grade would be a great stimulus to study on the part of those who have been deprived, by the exigencies of life, of secondary training.

Methods. Much of the work in Manual Arts thus far attempted in connection with the general evening school work, save in the department of drawing, has been experimental in character and does not admit drawing a conclusion as to the methods to be employed. The difficulty in securing adequate appropriations to insure proper equipment for serious work, the brevity of the annual term of study, an average of sixteen weeks, and the difficulties attending the regu-

*See Appendix II.

lation of attendance, handicap the movement and render the problem of the development of a given subject of study no simple one.

That such schools should afford not only the opportunity for a study of the theory and principles underlying a given branch of the arts, but should furnish as well the facilities for a practical application of that knowledge; is a fact too apparent to need statement. In cities equipped with a Manual Training High School, the problem should be a comparatively simple one, and several cities have already opened such buildings and are doing experimental work.

Regulations. The conditions governing public evening school work render the problems of admission and grading difficult, especially in grades below the high school. Examinations for the advanced courses, or certificates of previous training, are usually required for the advanced work, and certificates of proficiency are given to those who complete a given course. Yearly certificates of attainment are awarded to those who make satisfactory progress, but no regulation can take the place of persevering and self-denying purpose which is the essential factor in the carrying out of a definite and prolonged course of evening study.

GENERAL CONSIDERATIONS.

A survey of the work in progress in the cities noted in this article and personal observation of its operation in several of them, leads the writer to the conclusion that while a deal is already being done in this country which is excellent in kind, there is much which must be undertaken before our public extension work in the manual arts can equal that of foreign countries and assure to our evening schools the place and enthusiastic public support they deserve. Our extension schools as yet have not realized a sufficiently serious purpose. The evening school while it provides for the immediate and pressing need of the individual pupil, should nevertheless be a training school under whose instruction it will be possible for such pupil to secure such stimulation to mental processes as shall prepare him for advanced work in technical schools or along lines of individual research. Unless the evening school establishes the "student habit"

and fosters that mental development which we call growth, it will have no permanent power to command public respect or support. If it limits itself either on the purely mental or the manual side to that individual instruction which concerns itself only with immediate needs or financial advantage, it will fail to accomplish anything worthy the name of schooling and will fail to contribute to social well being.

SUGGESTIONS.

Annual Term. To the end that public evening school work shall be capable of such development as is here suggested, the annual term of its operations should be greatly lengthened. Limited, as it is at present in this country, to an average winter term of sixteen weeks, it can offer the earnest student neither the advantage nor the inspiration of very serious work. Under present conditions a completed course of study requires too many years for its proper accomplishment.

Supervision. Effective supervision by a man having thorough knowledge of the social and industrial conditions of the hour, as well as academic and technical training, is an essential condition to progress and success. The proper co-ordination of subjects of study and effective methods of work cannot otherwise be secured.

More complete reports of the work in progress in manual arts in evening schools, press articles urging its claims upon public attention, and discussion at educational gatherings are among the agencies which offer for the furthering of this work. The direction of such attention to the shortcomings of our present system is the surest means of their correction. Those best informed see in the near future a striking development in this department of our educational cosmos. Says Dr. Balliet of Springfield, in his annual report for 1903: "It may safely be predicted that the expansion of the public school system in the next ten years will be most marked along the lines of evening school work."

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APPENDIX I.

A statement by Subjects of the Manual Arts in Specialized Evening Schools as reviewed in this paper.

MACHINE AND ARCHITECTURAL DRAUGHTING. Pratt Institute Evening School, New York Trade School, Newark Public Drawing School, Lowell Textile School, Baron de Hirsch Trade School, Springfield Evening Trade School, St. George's Evening Trade School, Trenton School of Industrial Arts, Rhode Island School of Design.

DESIGN. THEORETICAL AND APPLIED. Pratt Institute Evening School, Rhode Island School of Design, Newark Public Drawing School, Trenton School of Industrial Art, Cooper Union Free Night Schools.

FREEHAND DRAWING. Pratt Institute Evening School, Cooper Union Free Night Schools, Rhode Island School of Design, Newark Public Drawing School, Lowell Textile School, St. George's Evening Trade School.

MODELING. Pratt Institute Evening School, Cooper Union Free Night Schools, Trenton School of Industrial Art, Newark Public Drawing School, Rhode Island School of Design.

ART METAL WORK. Pratt Institute Evening School.

CERAMICS, RUG MAKING, BOOK BINDING. Trenton School of Industrial Art.

WOOD AND LEATHER CARVING. Pratt Institute Evening School, Trenton School of Industrial Art.

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COLOR, COMPOSITION. Pratt Institute Evening School, Cooper Union Free Night Schools, Trenton School of Industrial Arts, Lowell Textile School.

CARPENTRY. New York Trade School, Baron de Hirsch Trade School, St. George's Trade School, Pratt Institute Evening School, Springfield Evening Trade School.

PATTERN MAKING, FORGING, SHEET METAL WORK. New York Trade School.

PLUMBING. New York Trade School, St. George's Evening Trade School, Baron de Hirsch Trade School, Springfield Evening Trade School.

MACHINE WORK. New York Trade School, Pratt Institute Evening School, Baron de Hirsch Trade School, Springfield Evening Trade School.

STEAM AND HOT WATER FITTING. New York Trade School, Pratt Institute Evening School.

APPLIED ELECTRICITY. PRINTING. New York Trade School, Baron de Hirsch Trade School, Springfield Evening Trade School.

TEXTILE PROCESSES. Lowell Textile School.

FRESCOING. HOUSE AND SIGN PAINTING. New York Trade School, Baron de Hirsch Trade School.

BRICK-LAYING. PLASTERING. New York Trade School.

APPENDIX II.

Manual Arts in General Evening Schools, reviewed by this paper, according to best reports obtainable.

DRAWING: MECHANICAL AND FREEHAND. New York City, Buffalo, Rochester, Albany, New York; Boston, Worcester, Springfield, Fall River, Cambridge, Lowell, Lawrence, Lynn, New Bedford, Massachusetts; Providence, R. I.; Hartford, New Haven, Bridgeport, New Britain, New London, Connecticut; Chicago, Illinois; St. Louis, Missouri; Cleveland, Columbus, Cincinnati and Dayton, Ohio; Minneapolis and St. Paul, Minnesota; Indianapolis, Ind.; Baltimore, Maryland; Philadelphia, Reading, Pittsburgh, Penn.; Kansas City, Kansas; Newark, Jersey City, Paterson, New Jersey; San Francisco, Los Angeles, California.

PRINTING. Chicago.

DESIGN. COLOR. New York, Boston, Worcester, Springfield, Hartford, Newark, Jersey City, Chicago, St. Louis.

MODELING. CLAY, WAX, PLASTILINE. Boston, Jersey City, Newark.

CARVING. WOOD AND LEATHER. Boston, Newark.

EMBROIDERY. Boston, New York.

LACE MAKING. Boston.

MILLINERY. Boston, New York, Hartford.

DRESSMAKING. Boston, New York, Hartford.

BASKETRY. Boston, New York.

BENT IRON WORK. Chicago.

SHIP DRAUGHTING. New York City.



The Stereopticon in the Art Course

FREDERICK HAMILTON DANIELS

THERE are occasions in school work when it seems imperative that numerous illustrations be shown to a class of teachers or of pupils. These illustrations are needed to elucidate some theme which it is desirable to make interesting and vital. It is necessary that these illustrations be shown at the right moment and that they be of such size that even details may be clearly studied. Such illustrative matter must be comparatively inexpensive, it should occupy but little space and it should be of such a character that it may easily be transported from place to place and used by various persons. In short, it should be a library of ready reference material, as available for school and public service as are the books in a public library.

The reference material needed in a well organized system of public school art teaching is so varied and extensive that the attempt to collect adequate illustration in the arts and crafts produces only meagre results. In point of excellence in use and moderate cost of equipment, the stereopticon and lantern slide offer opportunities equal in some respects and superior in others to the museum collections.

The course in fine art appreciation, especially in the high school, the normal school and the college, is one of the newer forces which is surely making progress. Such a course may be open to all students. It may be conducted without direct reference to the drawing work in the school, and its purport is strictly one of broad culture.

THE STEREOPTICON

There are three kinds of stereopticons which may be successfully used in schools. The cheapest and best under certain conditions is the sun lantern, costing from twenty to thirty dollars. This lantern

is of service only when direct sunlight is available, and where it is used in schools it is generally a permanent fixture in a schoolroom supplied with heavy window shades for excluding daylight. The sun lantern gives the best obtainable results on the screen from all makes of slides. There is no expense for light—it is the cheapest good lantern that can be purchased.

The acetylene gas lantern probably is next in point of school service. The lantern and acetylene gas generator cost from thirty to seventy dollars. It is advisable to get a high candle power burner and gas generator. The expense of running the lantern is four or five cents an hour. The light and consequently the image upon the screen are inferior to those produced by sunlight, electricity or oxy-hydrogen gas. Many schools purchase a sun lantern with the acetylene gas generator attachments for use on cloudy days and evenings, and this is the most satisfactory moderate priced outfit which can be secured for work under all conditions, as it may be used in any room which can be darkened.

Where the first cost of the lantern is not of serious import and the school building is equipped with a direct current of electricity, the electric lantern is the most satisfactory of all school stereopticons. An electric stereopticon costs from thirty to two hundred dollars. The single lantern costs less than the double lantern, but the latter is more convenient and pleasant in use as there is no evidence to the audience of the insertion of slides into the lantern, one view dissolving into the next. The expense for running varies from ten to twenty cents per hour, according to lantern and local rates for electricity. The light is as near sunlight as can be obtained and if the lantern has a permanent home in one room it is always ready for immediate use. Furthermore, it can generally be set up and wired for temporary use in any room of the school. The oxy-hydrogen outfit involves a mechanism too complex for school conditions.

The care and manipulation of the sun, acetylene or electric lantern may be easily learned. Two high school boys can be detailed to take entire charge of the lantern. For one person to attempt to

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give the talk and operate the lantern is a mistake, it inevitably detracts from the spirit of the address.

Advertisements of stereopticons are found in photographic magazines and catalogs may be had for the asking.

THE LANTERN SLIDE

The ordinary lantern slide costs from forty to fifty cents. Colored slides range in price from one dollar upwards. There are many makes of slides, of these none are better than those of Braun, Clement & Co., Paris; and it is to be noted in this connection that slides imported for educational purposes are free of duty. The best slide and the best lantern cost but little more at the outset than the cheaper grades and the continued pleasure in the perfect instrument and accessories is compound interest on the investment.

As one sees with increasing clearness the possibilities of the lantern and slide in school art work, there comes a time when it seems desirable to own a private collection of slides which shall be comprehensive in range of subject and always accessible for immediate use. One realizes that the best collection of slides for the individual to use is that which has been the gradual outgrowth of individual needs. It is improbable that the average teacher will buy such a collection of slides. The cost is prohibitive. For the teacher who by temperament is interested in such a manual art as photography, the outlook is bright for the successful working out of a school problem through indulgence in a fascinating pastime. The principal objection to slide making is that it takes too much time, but the force of this opposition is lessened when one considers that the process compels the continuous and careful study of the illustration itself in its every detail. Hence the preparation of the slides is a direct preparation for the talk in which they are to be employed.

Lantern slides may be made by the wet or dry plate process. There is practically no difference in the quality of the resulting slides. The wet plate is sometimes said to be more luminous, and it is claimed that the dry plate has a better gradation of values. When a wet and a dry plate are compared in actual use their images on the

screen are so nearly identical that no decision can be reached as to which is preferable.

There is a vast difference in the difficulty in mastering the two processes of making. Unless one has endless patience and perseverance and a really natural aptitude for photography, and its chemistry, it is a waste of time and money to attempt the wet plate process. Until the introduction of the dry plate the amateur photographer was practically unknown. Again the failures which arise from the use of collodion and nitrate of silver in making the wet plate may be due to any one of so many causes that a word of advice from one experienced in the process is worth more than all available books on the subject. Hours of experiment and trial may be saved by a five minute conversation with one who knows. Given this aptitude for photographic work and a determination to succeed, the helping hand can be found, often in a local photographic studio where the collodion process was used years ago or where it is employed now for tintypes. A clearly written description of the wet plate process is given in King's Geographical Reader, Fifth Book. Additional reference may be found in "Photographics," by Edward L. Wilson.

The dry plate process of slide making is as simple as the making of the ordinary dry plate negative. Instructions are found in any modern photographic manual and are enclosed in each box of lantern slide dry plates. A variety in color may be secured by using the G. B. P. R. slides, which produce green, brown, purple and red slides.

The cheapness of the wet plate is the most potent argument for its use. A picture or an object may be photographed upon a wet plate and a wet plate slide made therefrom at a total cost of two cents for the whole process, including binding and finishing. To produce negative and slide by the dry plate process would cost eight or nine cents. A failure with a wet plate costs less than a quarter of a cent as the glass can be cleaned and recoated for future use. The dry plate process is the cleaner as the nitrate of silver used in the wet plate work stains the hands a deep brown which can be removed only by vigorous scrubbing with cyanide of potassium, a violent poison.

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One process is about as rapid as the other. Eight or ten slides per hour can be made from completed negatives. As the making of the slide itself, that is, the production of the image upon the plate, is but a part of the entire process, the above statement may be somewhat misleading. An expert amateur slide maker can prepare glass, make negatives (from photographs or objects) and slides, label and bind the latter and complete about two hundred slides in a full week's time if all conditions are propitious—which they seldom are.

Slides can be made with any regular plate camera and lens, costing from ten to sixty or more dollars. The camera should have a long bellows and should take pictures at least $3\frac{1}{4}$ by $4\frac{1}{4}$ inches in size. It pays to get the best lens one can afford, such as the Goerz, Bausch and Lomb, Cooke, Collinear or Ross. If one is to make several hundred slides, it is advisable to add to this outfit a copying camera at a cost of twelve dollars. One lens will serve in both cameras. The copying camera is not an absolute necessity, but it has devices which will save time and annoyance in securing an image upon the ground glass of proper size and in the correct position.

As running water is a necessity, the amateur at home often utilizes the bathroom for darkroom purposes. In any continued serious work, however, it is a detriment to work in an improvised darkroom. A portable darkroom in five sections can be made from $\frac{3}{8}$ inch sheathing, set up for temporary or permanent use in the attic, and a sink and faucet placed therein and connected by a plumber with the hot water reservoir. Such a dark room is always ready for work by day or night and is as useful to the slide maker as is the studio to the artist.

Slides in individual or school collections are kept in sets arranged according to subject, or are filed in cases as are card catalogues. Either plan allows adequate enlargement of the collection and will be found satisfactory in practice. The cabinet owned by the writer contains about sixteen hundred slides. It was originally a book case. Pine boxes of $\frac{3}{8}$ inch stock were made 11 by $4\frac{3}{8}$ by $3\frac{1}{2}$ inches. Each box has cardboard partitions one inch apart, and holds about fifty slides when filled. Such boxes may be

cut out rapidly with a circular saw. Fifty of them can be made in two days at an approximate cost for material of four cents each. On the end of each box are printed the names of the artists whose work may be found in the box.

THE STEREOPTICON TALK.

We will assume that a series of stereopticon talks can be made a factor in enriching the school art work. The immediate question for the Supervisor or teacher is "What shall be my first subject?" Scores of possibilities will come to mind.* At the beginning it is wise to be guided by one's individual preference and knowledge. The teacher who is fond of the works of Michael Angelo will do well with this subject. It is almost an axiom that a class can be interested in any topic, "Enthusiasm is the leaping of lightning, not to be measured by the horsepower of understanding." The best subjects treat of pictures, people or things which are frequently met with in life. It is ill-advised to begin with early artists whose names and works are known only to connoisseurs.

Having chosen the subject there will be gradually evolved in the speaker's mind a general scheme of treatment. With the plan to give a series of talks comes the interesting quest of suitable illustrative material. The amateur photographer finds endless riches in city, country and sea life, in the animal, vegetable and mineral kingdoms for "Nature is divine art," in photographs, books and the negatives of his brother amateur. The seeking for illustrations for

*Inquiries as to the use of the stereopticon in the schools of various cities have resulted in the following list of subjects of successful talks to pupils, teachers and public. It has seemed unwise to classify this list as to whether specific talks are intended for pupil or public audiences. With possible modification, any one talk in the list could be made to appeal to any audience.

Nature and Art.
Beautiful New England Trees.
More Beautiful Public Life.
Village Improvement.
Art in the Locality of the School.
Art the Only Permanent Race Expression.
Arts and Crafts.
Art in the Home.
Art in Dress.
The Principles of Art.

The World of Pictures.
The Interpretation of Pictures.
Sculpture as an Art.
The World's Architecture and Ornament.
The Decoration of Schoolrooms.
Schoolroom Furnishings and Teaching Devices.
School Arts and Crafts.
The Principles of Art in School Work.
Decorative Design.
Constructive Design.

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one subject results in finds which suggest new fields for exploitation. It is astonishing how wide a range of illustration may be profitably employed in a single talk. It eventually becomes a question of not what can be found, but what must we reject.

We have, then, the collection of slides and the necessary reference material in books or experience. To be successful these talks must be interesting. People are interested in humanity more than in statistical data. The human and personal phases of a subject will enliven the necessary statistics. Anecdotes and amusing slides often make possible renewed interest in serious discussion. Moreover, as all art is the revelation of life, the life story from which the art is an outgrowth will necessarily lead to a more complete comprehension of the art. Ruskin says, "Art is appreciated according to the impressionability of the spectator and the knowledge brought to the subject."

The physical vitality of the speaker is of importance in a talk such as we are considering. It is well to "assume a virtue, tho' we have it not."

All other considerations being equal, the preference of an audience is always for the speaker who is not confined to manuscript. Headings, notes and suggestive data may be clearly seen by the light reflected from the screen and referred to when necessary. This leaves the speaker free to move about as occasion demands. The slides themselves as projected upon the screen are the only notes needed. One should work at a subject until it becomes a part of himself, until its contemplation and discussion are a keen pleasure. Then its presentation is a revelation of self, a portrayal of joy in work, an individual art expression.



Bibliography of the Manual Arts

September, 1903 to September, 1904

LOUISA PIERCE

THE following bibliography contains some two hundred titles of articles on the Manual Arts in schools, and on the Arts and Crafts Movement. These were selected from leading magazines and have been arranged alphabetically by authors and by subjects.

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Craftsman, The.

Drawing and Manual Training Journal.

Educational Foundations.

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